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**THE ETIOLOGY OF NEURALGIA.\***

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I had hoped there would be a paper preceding my remarks in order to make clear what neuralgia is; for we shall find in discussing and studying the subject that it is rather a difficult thing in many instances to decide whether a given case of pain is to be considered as neuralgia, or as the result of an inflammation, deterioration, degeneration, or other change of a morbid character involving a nerve or nerve center. As there has been nothing said upon that point, I will take it for granted that the matter is understood, and that in speaking of neuralgias it is intended to speak of those pains that are sufficiently localized to be identified with nerve trunks, branches and terminals, and that are not produced by severe injuries, inflammations, or marked degenerations of a palpable character involving the nerve trunks or organs themselves. With that premise, I will speak of its etiology.

I would say in this connection that neuralgia is not a disease, but is rather a symptom of disease. We shall see that it may be caused by so many different conditions and lesions that it cannot be consid-

ered as a specific disorder. It must rather be considered as an evidence of disease involving the nervous system.

Now, when we consider the causes of neuralgia we shall find that they fall into several clearly-marked categories, such as used to be spoken of as predisposing causes and exciting causes, but it is rather difficult to draw a line between them, and therefore in my classification I shall consider as nearly as possible the actual causes of pain itself. In doing that we shall find, in the first place, that there are certain conditions which seem to predispose to its occurrence, that is, conditions of the body or of the general organization; and first among the predisposing conditions may be mentioned heredity.

*Heredity* is a very general term. It is made to cover that assemblage of characteristics derived from our ancestors; and we find that the physiological and pathological peculiarities of the ancestral stock have great influence over the diseases of the descendants. Persons who are subject to neuralgia are very frequently found to be the offspring of parents who have experience of disease in their own persons, and have been weakened in such a way as to weaken their offspring. We find a familiar illustration of this in the children of persons who are tubercular or scrofulous, who are the victims of nervous dis-

\*Remarks made before the Chicago Medical Society, March 18, 1889.

eases, who have been addicted to alcoholic excesses. The children of such parents are more liable to neuralgia than the children of those who have been more favored in circumstances and mode of life. We shall see presently why this is so.

*Age.*—Another of these predisposing conditions is said to be age. It is observed that neuralgia occurs more frequently at certain periods of life than at others. It is more frequent among children during the period of rapid growth. We do not find it among very young children. It is then an uncommon thing, yet it does sometimes occur, but more particularly as they approach the period of puberty. As they pass through the period of second dentition they are more liable to neuralgia than younger children. As individuals pass through the stage of middle life, 20 to 40, they seem to be more liable still to the disorder. This is due to the fact that during these years of life there is a larger number of persons who are subjected to the causes that more immediately operate to produce it. As we pass that period of life—the 40th year—the number of persons who exceed that age diminishes rapidly in consequence of the fact that so many die, and the number who are left to experience neuralgia diminishes in proportion. After the period of decline is reached, we find there is a tendency to neuralgias of certain kinds that are dependent upon deterioration of the nerve centers, and it is to causes of that description that the majority of neuralgias which occur later in life are to be ascribed.

*Sex* has been thought to be one of the predisposing conditions. It is true, neuralgia occurs with great frequency among females, but that is due to the fact that a great many females suffer from conditions of debility and exhaustion, and are the victims of certain diseases that also favor the production of neuralgia. The other sex also are victims, not perhaps from the same causes, but the number of cases is sufficient

to lead us to believe that the female sex has no great monopoly in neuralgia.

*Anæmia* is another fruitful predisposing condition of neuralgia. It is to the existence of anæmia among the female sex that we must often ascribe the supposed predisposition of women. Starvation may be reckoned along with that condition. We find many persons suffering from unwholesome nutrition; the tissues are not properly nourished, and as a consequence of this imperfect nutrition of the tissues they become unstable in their organization, and more readily react to external influences. That reaction, if excessive, unusual or unnatural, will produce pain. We call it neuralgia. And among the other conditions that are allied to, and probably based in great part upon, anæmia, and upon an imperfectly nourished condition of the tissues, may be mentioned hysteria, neurasthenia, hypochondria. These, generally, constitute the conditions which are observed to predispose to the occurrence of painful affections of this character.

*Exciting Causes.*—We find these may be considered in two principal classes. Those that are molecular in their origin, consequent upon disturbances in the molecular constitution of the body; and a still larger class, perhaps, that are produced by direct intoxication of the tissues of the body, including the nervous tissues. Among the disturbances of molecular motion within the body, which produce either excessive, deficient or perverted modes of action may be reckoned cerebral commotion. This may have its origin in anything that produces over-excitement or agitation of the brain, as in the case of over-action of the sensory organs to powerful light, sounds, odors, tastes. All those reactions of the sense organs which are carried to excess may produce painful conditions of the nerves, which should be reckoned, strictly speaking, among the neuralgias. The same thing is true of commotions that originate under the activity of the intel-

lectual organs of the brain. A person who works too hard, gets too little sleep; who uses his eyes at night reading or studying, if he has passed the period of childhood, is very liable to suffer from neuralgic pain that localizes itself in the back of the head and neck, and is largely due to over-excitement of the brain and to lack of rest.

Then, again, over-agitation of the emotional organs of the brain will produce similar results. Electrical excitement of the nervous apparatus, occurring either as a consequence of electrical disturbances of the atmosphere, or as a consequence of medical abuse of electricity, may produce neuralgic pains. Perversions of the circulation, by their effect upon the molecular movements of the brain and of the nerve centers, may produce neuralgic pains, many of which are supposed to be due to errors of circulation, either excessive or deficient, involving the spinal cord, the sensitive grey matter of the nerve centers in the spinal cord, or of the brain itself which takes cognizance of the impressions made upon the sense organs of the body. We find the action of heat and cold, if carried to excess, productive of painful states of the nervous system. You are all familiar with the simpler forms of neuralgia produced by the action of cold upon the extremities of the body in winter when the weather is cold; heat also will produce similar or analogous effects, if the person is exposed to heat of any kind for too long a time.

We shall find, too, that intoxication of the nervous system with inorganic poisons is a fruitful source of pain. I merely mention in passing the familiar effects produced by the introduction of lead, copper, mercury, arsenic, carbon disulphide, carbon monoxide, compressed air, and substances of that class into the body. We may say that all the metals or any of the chemical elements introduced into the body in excess may become a source of pain.

You are also familiar with the effects of

metallic poisons of all descriptions. The gases also that belong to the inorganic kingdom, if they are introduced in excess into the body, may produce pains that are severe.

Then, we find that there is a class of intoxications in which the poisons that are derived by chemical process from the products of fermentation are capable of producing pain. Examples of these poisons are found in alcohol, chloroform, and ether. These substances are narcotic themselves. Several interesting cases have been reported of severe neuralgic pain following the administration of ether for surgical purposes. After recovery from the effects of the ether the patients for weeks and months have suffered with severe neuralgic pains. I mention these more common substances. All of the derivatives of fermentation are analogous to these, and, like alcohol, ether and chloroform, will be found in certain instances to be productive of painful conditions of the nerves.

Again, we find neuralgia may be produced by intoxication of the nervous system with vegetable poisons of the ordinary type, such as muscarine, opium, arnica, hydrocyanic acid, the solanaceous alkaloids, caffeine, thein, nux vomica, and many other kindred substances. Here we must pause to recognize the fact that there are two ways in which the nerve centers can be acted upon in a painful way. One is through the direct action of the poison upon the nervous tissue, and the other (usually observed in cases of chronic intoxication) is consequent upon the modifications of nutrition and the deteriorations of structure which follow these modifications of nutrition. It may sometimes be an open question for debate as to which of these two actions is the real cause of the pain in an individual case. This we shall see illustrated still further in cases of intoxication with poisons of parasitic origin, as, for example, where we have to deal with the essential poisons of the fevers,

such as typhoid fever, etc. At the outset of the fever the patient experiences intense pain, which is spoken of as headache, backache, aching in the limbs and in different parts of the body. This is due to the direct action of the specific poison upon the nervous organization of the body; then after the specific poison has run its course and has ceased to be primarily operative, we have disordered health, anæmia, semi-starvation, hysteria, and perhaps other conditions acting as secondary conditions that predispose to neuralgia. So that persons who are intoxicated in this way may suffer in a twofold manner from the consequences of the specific poisons.

It is occasionally observed that patients suffering with tubercular infection become the victims of intense neuralgic pains, which are supposed to be due to the action of the poison that is secreted or produced by the specific parasite. The same thing is true of syphilis and of gonorrhœa, after which may sometimes be observed that curious form of neuralgia, characterized by fugitive pains that persecute their victim for many months after the original infection has taken place.

Again, the poisons that produce septicæmia, pyæmia, and malarial infection, when introduced into the body, in like manner with the poisons that produce specific fevers, cause pain as one of their primary effects. As a consequence of alteration of the liquids and solids of the body through impaired nutrition thus occasioned, painful conditions may be perpetuated after the original poison has ceased to operate. In addition to the above must be mentioned the poisons derived from intestinal bacteria which exist in the stomach and intestinal canal and which, in conditions of ill health, produce large quantities of poisonous matter that is absorbed and circulated through the body operating upon the nervous apparatus, and producing a great deal of distress.

Lastly, we find that there is a class of

neuralgias dependent upon intoxication with poisons of auto-genetic origin—poisons produced by the morbid action of the cell elements of the bodily tissues themselves, such as occur in rheumatism, gout, uræmia, excess of sugar, matters concerning which the present state of our knowledge is very imperfect. Such, then, is the account I would give of the causes of neuralgia and their classification.

533 WEST ADAMS STREET.

### A CASE OF ABORTION IN THE THIRD MONTH.

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The recently\* published edition of Skeene's "Diseases of Women" contains a large number of reports of cases which are described in such a manner that their clinical history is clearly shown. The value of such reports to the recent graduate, and to the practitioner who for any reason is inexperienced, can scarcely be over-estimated. In the experience of the writer, his greatest difficulties and perplexities have arisen from an inability to find reports of cases similar to those which for any reason have taxed his knowledge, tact or therapeutic resources. And this, too, despite a preliminary hospital service, both as interne, and post-graduate student, as ample and extended as the current opinion in regard to medical education demands. In gynæcological work, this demand for clinical histories is admirably met in the book already mentioned, but in obstetrics, neither the translation of Charpentier published by Wood & Co., nor Parvin's "Science and Art of Obstetrics," are of any assistance in this particular. This clinical report, therefore, is furnished for two reasons, viz: To show the favorable course of the temperature without the use of medicines, and in the hope that it may be of value to any practitioner, equally or even more inexperienced than the writer,

who may chance to read it. And in the interest of brevity only pertinent facts are mentioned.

The patient is twenty years old, married, has one child eighteen months old, has had one prior miscarriage, and always during her menstrual life the catamenial periods have been very irregular.

In the present instance professional aid was first sought at 2:30 A. M., March 1st and the statement then made and the conditions found were as follows:

Menstruation had not appeared for "several months," (patient's statement), and with the intention of bringing it on the patient took a Turkish bath a few days before this date. During the afternoon of February 28th, uterine hemorrhage began and shortly became associated with uterine contractions. Medical assistance was evidently sought for the purpose of arresting the hemorrhage rather than the abortion.

Examination revealed the loss of considerable quantities of blood, a moderate uterine hemorrhage persisting, and the patient pallid but in good spirits. After removing the clots of blood from the vagina the placental membranes were felt protruding from the external os and lying partly in the vagina; the os and canal of the cervix would not admit the index finger. With the aid of a Sims' speculum the vagina was carefully dried with absorbent cotton, and a tampon placed which entirely filled and distended it. The pieces of cotton placed against and about the cervix were dipped in an aqueous solution of carbolic acid, two and one-half per centum, and squeezed partly dry before their introduction. A foetus at the third month was found in the clots.

The patient was next seen at eleven o'clock, eight hours after the tampon was placed. There had been no escape of blood from the vagina, and only a few of the balls of cotton were stained, and these were odorless. A part of the placenta, connected with the rest of that organ, and about one

inch long, lay in the vagina protruding from the external os. The index finger was easily passed through the internal os and the placenta found adherent about the left corner of the uterus. Under anaesthesia induced by Squibb's ether, the uterus was drawn down with volsella forceps fastened in the anterior cervical lip. Although the finger was easily introduced into the cavity of the uterus, it was very difficult to completely remove the placental fragments, and the conventional suggestion to use only gentle force could not be followed. A point of especial interest in this connection is the very marked superiority of Emmet's curette forceps over the finger or any of the various forms of dull curettes for removing the placental debris from the cavity of the body of the uterus. At the close of the curettement the intra-uterine douche was not employed because of the apparently complete removal of all placental tissue, and of the absence of hæmorrhage. By means of cotton wrapped upon an applicator, a mixture of equal parts of the tinctures of the chloride of iron, and of iodine, was freely applied to the cavity of the uterus. A copious vaginal douche of simple warm water was next given, and without either uterine or vaginal tampon the patient was put to bed with an ice-bag upon the hypogastrium. Careful directions were given to prepare and apply over the external genitalia and perinæum cloths dipped in a 1 to 1,000 solution of mercuric chloride. The nurse, who was untrained and not reliable, was also instructed to wash her hands with hot water, soap and a nail-brush both before and after changing the perineal cloths, and to use a 1 to 4,000 mercuric chloride solution in bathing the patient's perineal region and vulva.

The following copy of the clinical notes taken in the case will sufficiently explain its course from this stage:

March 1.—8 P. M. P. 112, T. 102.6°. Patient has had and has now only a very little pain either in the pelvic organs or

elsewhere, and the amount of tenderness on palpation over the hypogastric and iliac regions is very slight. No tympanites; no vaginal discharge.

March 2.—2 P.M. P. 108, T. 103°. Conditions are substantially those of yesterday except a slight vaginal discharge which has no odor.

March 3.—Noon. P. 96, T. 100.3°. The nurse reports a slight odor about the soiled napkins. In other respects the conditions of yesterday are unchanged. Directions given for a vaginal douche twice daily of a 1 to 4,000 mercuric chloride solution.

March 4.—3 P.M. P. 96, T. 100.2°. Bowels moved twice since yesterday. Conditions otherwise unchanged.

March 5.—3 P.M. P. 84, T. 99°. Bowels moved once. Vaginal discharge has no odor. Tenderness on palpation over abdomen scarcely more than normal. The appearance of the patient is that of health and comfort, and she says that she feels perfectly well. The use of ice over the hypogastrium stopped.

March 7.—2 P.M. P. 84, T. 98.6°. There is still a very slight odorless vaginal discharge. The patient declares herself free from pain and discomfort and wants to get up.

With the customary directions in regard to caution in resuming her usual occupation, the patient is discharged.

The temperatures given were taken in the mouth with a Hicks' thermometer which has been twice corrected and they are reliable.

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### THE DIFFERENTIAL DIAGNOSIS OF NEURALGIA.

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We define neuralgia as a nervous disorder characterized by pain, and unconnected, so far as we know, with disease of structure.

There are great difficulties in the way of the diagnosis, growing largely out of the fact that its principal symptom is subjective, and may therefore present the most surprising varieties, due to idiosyncrasies. The essential characteristic symptom, however, is pain, which is limited to a definite trunk or branch of the nerve and its ramifications, and is usually unilateral. This pain is paroxysmal, either intermitting, or, at least, remitting in its character, and it is intensely acute and subject to a great variety of characteristics. There are certain points in the course of the nerve, or in its area of distribution, that are sensitive to pressure (points douloureux); and this pain has certain concomitant sensory symptoms, irradiation to other sensory nerves, and hyperæsthesia or anæsthesia of the skin in the region supplied by the affected nerve. Along with the pain there may be concomitant motor phenomena of a convulsive or paralytic type. There are certain vaso-motor disturbances, such as a diffuse or more or less redness or pallor of the skin; a sensation of coldness, and certain secretory phenomena, such as in the case of neuralgia of the fifth nerve; abundant lachrymation, nasal catarrh, and salivation, and in all cases there may be an increase in the urinary and cutaneous secretions, and certain trophic phenomena, such as change in the color of the hair, hypertrophy and thickening of various tissues, and also atrophy and emaciation, with skin affections, such as herpes zoster, urticaria, etc. The neuralgia is unaccompanied by any inflammatory or local symptom, or any general disturbance of the health, commensurate with the amount of pain endured.

*Neuralgia of the fifth nerve* may usually be diagnosticated without much difficulty by the character of the pain, its intensity, its lancinating and paroxysmal character, by the painful points being well defined at the supra-orbital foramen, the infra-orbital foramen, and the mental foramen. It may

be mistaken for tooth-ache; careful examination of the teeth usually differentiates this. It may be mistaken for inflammation of the periosteum of the facial bones, or the membrane lining the antrum and frontal sinuses. The kind of pain, its seat, and the degree of sensibility to pressure usually differentiate this.

The diagnosis of the seat of neuralgia, as to whether it is peripheral or central, can only be made in a very few cases. We infer its peripheral seat if we find some evident peripheral cause from the possibility of cutting short the attack by remedies applied to the periphery, from the presence of painful points during the interval between the paroxysms, and the limitation of the pain to a single branch of the nerve. A point in favor of its central origin is the absence of painful points and the interval between the attacks, the disturbance of other cerebral nerves, associated with marked mental symptoms.

The diagnosis of *cervico-occipital neuralgia* is usually easily made. It is only liable to be confounded with muscular rheumatism, and its differentiation from this should not be difficult.

*Cervico-brachial neuralgia* requires special care in its diagnosis since the arm may be the seat of other painful affections, such as muscular and articular rheumatism, diseases of the bone, etc. Differentiation here is aided by the "points douloureux." They are the axillary, corresponding to the brachial plexus, the scapular, near the inferior angle of the scapula, the acromial, in the angle between this process and the clavicle, the median cephalic in the bend of the elbow, the ulnar corresponding to the most superficial portion of the ulnar nerve at the back of the elbow joint, and the radial at the point where the radial nerve becomes superficial. These *puncta dolorosa* would be absent in the affections for which the disease may be mistaken.

*Dorso-intercostal neuralgia* is most frequently confounded with rheumatism of

the thoracic muscles. The painful points are (1) close to the vertebral column corresponding to the point where the nerve emerges from the inter-vertebral foramen; (2) where the nerve emerges from beneath the skin at a point about the middle of the entire course of the nerve; and (3) where the nerve pierces the muscles close to the sternum.

A consideration of these painful points, in the absence of any special pain in the muscles, or any aggravation on making movements, will usually differentiate them.

*Intercostal neuralgia* may be mistaken for *angina pectoris*, but the intense fear, great anxiety, sense of suffocation, and disorder of the circulation attending the latter, will usually make differentiation easy.

*Lumbo-abdominal neuralgia*. The diagnosis is not unattended with difficulty. It may be confounded with myalgia, especially lumbago. In lumbago, however, the pain is usually circumscribed, does not radiate, is aggravated by stretching of the body and disappears with rest. The differentiation of this form of neuralgia from hip and knee-joint disease requires special care and attention.

The diagnosis of *sciatica* is often surrounded by considerable difficulty. The principal painful points are those which correspond to the sacral foramina, the fibular point at the head of the fibula, and the external and internal malleolar points. It may be mistaken for myalgia, differentiation being made by the diffuse character of the myalgic pain and by its being increased by definite movements. *Sciatica* may be mistaken for hip-joint disease, and the greatest care is necessary to avoid error here. The absence or presence of pain when the head of the femur is pressed against the acetabulum; the age and state of the general health; the elongation or shortening of the leg; the shape of the lower part of the back; attention to the painful points of neuralgia; the paroxys-

mal character of the pain, and its mode of distribution; the presence or absence of fever and inflammation, and the mode of carrying up the leg, are all to be considered in making the diagnosis. The sharp pains of locomotor ataxia are more frequently felt in the legs than in any other part of the body, and are often mistaken for neuralgia. Differentiation here is made by considering their changing seat and momentary duration, by their not following the nerve trunks; by the absence of the painful points, and by their frequently being so localized that the point of the finger will cover the seat of the pain; by the condition of the pupillary and patellar-tendon reflexes, and by the incoordination of muscular movements.

597 WEST JACKSON STREET.

### **CASE OF PERNICIOUS ANÆMIA SUCCESSFULLY TREATED WITH IRON AND ARSENIC.**

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On Jan. 5th, 1889, Augusta Johnson, a Swedish domestic, single, aged 25 years, was admitted to the Gynæcological Ward under the supposition that the marked anæmia from which she was then suffering was secondary to, or symptomatic of, some uterine affection as yet undiscovered. Her only noticeable symptoms were extreme weakness and "bloodlessness." Not only was her face totally devoid of color, but her lips and the mucous membrane of her mouth were blanched and ashen.

Inquiry as to family and venereal history, habits, etc., elicited facts having only negative value. The menstrual function had been established without incident and she had always been strong and well until the spring of 1885, when she began gradually, and without evident cause, to lose strength and color, but did not emaciate in the least. These symptoms increased in severity for eight or nine months, when

they began to yield to treatment. From this time her recovery was rapid and complete, she feeling as well as ever until about six months before applying at the Hospital, at which time she began again to lose color and strength, but as before did not emaciate.

Examination upon admission showed the patient to be well developed and well nourished even to the verge of obesity. The skin had a natural feel, but was waxy in appearance; the lips and buccal membrane devoid of color, presenting an ashen hue. The conjunctivæ were of pearly whiteness.

Vaginal examination showed an intact hymen, a well-formed uterus in a normal position, and a cervical canal which easily admitted the sound. In other words, this examination was negative as far as determining the cause of her malady. Menses regular and with but little pain. The patient complained only of weakness following exertion, even of the slightest degree. Pulse 90, soft; temperature 99.2°; respirations about 18 or 20 a minute.

*Heart.*—Negative except that the second sound was perhaps a little shortened and accentuated. A blowing murmur was heard over the course of the great vessels of the neck, most marked on the right side. In this connection it may be said that the patient at times suffered from a pain radiating from just below the left nipple to a point beneath the right scapula. She complained also at times of a slight breathlessness upon going up even a few steps, but there was not the slightest œdema of the extremities nor has she ever suffered from rheumatism.

*Lungs.*—Examination entirely negative.

*Spleen.*—This organ was slightly enlarged.

*Kidneys.*—Urine acid, sp. gr. 1025, and contained no albumin, casts, or sugar. Was considerable in quantity and pale in color.

*\*Stomach, Pancreas, etc.*—There was almost complete anorexia, yet food once taken

did not cause distress. There was a particular aversion to fatty foods, yet an examination of the fæces showed no failure of the pancreatic function. Bowels had as a rule been sluggish.

*Ophthalmoscopic examination.*—Each retina showed numerous yellowish spots having bluish-gray areolæ. Their average size was that of the macula, and they were most numerous in its locality. The disks were somewhat swollen and quite anæmic.

Microscopical examination of the blood showed (a) red corpuscles of the usual size and form; (b) white corpuscles in the proportion of 1 to about 85 or 100 red; (c) numerous irregular (rod- and kidney-shaped, globular and tailed) red corpuscles; (d) numerous highly refractive coccus-like bodies appearing much as would globules of oil; (e) irregular masses of a brownish-red amorphous material.

*Diagnosis.*—Idiopathic or pernicious anemia, with an actual leucocytosis.

Desiring to test the efficacy of iron and arsenic in this class of cases the patient was put upon the following:

R

Massa ferri carb. . . . . ʒij  
Liq. pat. arsen. . . . . sʒiiss  
Syrup. limonis. . . . . sʒiij  
Aquæ. . . . . g.s. ad sʒiv

Rub the mass thoroughly with the syrup, add the Fowler's Solution, and direct:

Teaspoonful four times a day. She also received at night a pill containing aloes, nux vomica, piperine, etc.

Two weeks afterward I find this entry on the history: "Lips begin to show color, patient says she feels better and has some appetite"; and one month from the time of her entrance she was discharged sufficiently recovered to enable her to engage in light work for the entire day without feeling the worse for it. An examination of the blood at this time fails to show further abnormalities than a slight excess (proportionately) of white corpuscles.

COOK COUNTY HOSPITAL.

## EXTRACTS AND ABSTRACTS.

### *Notes on the Value of Some New Drugs.*

—The drugs that I purpose to say a word or two about to-night are paraldehyde, urethan, antipyrin, and pilocarpin; and perhaps, in dealing with antipyrin, I may say a word or two upon my experience with other antipyretic drugs. In these go-ahead days I may be taken to task for calling these new drugs, and I had some doubt how to name my paper; but if I cannot call them new I most certainly cannot call them old, and no equivalent to the "subacute" of medicine came ready to my hand. Let me also say that I do not propose to treat of these drugs from any other than my own standpoint; it is simply my object to say in what I have found them useful, and ask you for such experience as you may have of the same agents in similar or other fields. Thus I shall hardly, if at all, discuss the actions of the remedies, nor is it my object to give even a summary of the diseases in which they have been used or recommended.

Now, first of all, *paraldehyde*. It has been out, so to speak, for several years, but I do not think it is at all in common use. I am rather fond of it, and have given it frequently now certainly for three or four years, and that means in a large number of cases. Originally recommended, I believe, as a hypnotic, one that combined the advantages, to the exclusion of the disadvantages, of chloral and bromide of potassium, I tried it first of all in cases of insomnia. I do not consider it at all a reliable drug for that state of things; but it is a drug of unquestionable value in the restlessness and cardiac asthma so often seen in aortic disease, and in the laboring dilated heart of chronic Bright's disease. I well remember the first case in which I gave it some years ago, a man who had long been subject to gout, and who had a granular kidney and a large dilated heart. His distress was extreme, and I had ex-

hausted all the old-fashioned remedies (than which few new are better), and many new, including caffeine, and with a marked condition of Cheyne-Stokes' breathing, he had all the aspect of speedy dissolution. As a last resource I gave him half-drachm doses of paraldehyde, with marked relief to the end of the case, which occurred about a fortnight later. I have also found it occasionally useful in the headache of renal disease. In two cases, where this was especially troublesome in the early morning, it was taken on and off for many months, with great relief. As a general rule, nitro-glycerine is the more reliable remedy for the headache of Bright's disease, but the symptom is often a troublesome one, and paraldehyde may well be kept in memory for occasional cases. But there is another class of cases in which I think it of even more use. It was recommended some few years ago, I think by Dr. Strachan, for certain cases of mania, and some three years or so ago I had to deal with a very troublesome case of alcoholic delirium. The patient was a very free drinker, had had delirium tremens twice before, and was now in a low, muttering, sleepless condition, which nothing seemed to quiet or control. He had been in a semi-comatose state already for five days. He was quite unheeding of any one about him, talked in an unintelligible mutter, and his muscles were tremulous, flabby, and wasted. As his wife was his equal, if not his better half, in drinking capacity, he was sent into Guy's Hospital, and for eighteen days he remained in much the same state. During that time his treatment consisted of free aperients, iodide and bromide of potassium, opium, and latterly of subcutaneous injections, first of  $\frac{1}{100}$  grain, and then of  $\frac{1}{60}$  grain of hyoseyamine; none of them seemed to do him any good. I then tried half a drachm of paraldehyde three times a day, and within a day or two he was much clearer in his mental condition, and before a week was

out he was practically well. He remained somewhat feeble-minded for some little time, but he quite recovered eventually. Since then I have given it in similar cases several times. Whether it acts as a stimulant or a sedative I do not know, but it certainly sometimes quiets the delirium and clears the mental faculties. My friend Mr. Wornum lately ordered it in another such case, but it was only given in ten-minim doses. The general condition improved decidedly, but the mental condition still remains cloudy. However, the patient has come out of a semi-comatose state, and is now sitting up, although she still suffers from delusions.

Another case of what I think may be called a similar ailment was treated in a similar manner. A young fellow, aged 27, had typhoid fever badly; he became excessively emaciated, and not long after the fever left him he went off his head; he was very delirious and troublesome. Free stimulation failed to restore him, and he was, therefore, ordered half-drachm doses of paraldehyde. This was on the 8th of the month. The stuff was so nasty, he said, that he would take no more, and when I again saw him, on the 11th, it had not been persevered with. He then began it regularly, and within four or five days he was much clearer and less delirious, and at the end of a week he was practically well. \* \* \* \*

Of *wrethan* I have not much to say, but that little is in its favor. I have used it in a large number of cases as a hypnotic, and although it often fails, I think it is one of the best remedies of the kind since the introduction of chloral. I give it in fifteen-grain doses in water, and have often found it useful; and once I remember it was very so in relieving the headache of early typhoid.

Of *pilocarpin* I have only two points that I wish to make. I have, of course, used it quite commonly in Bright's disease, and still do as a usual thing, and it seldom

fails to induce a copious diaphoresis; but one day it occurred to me to order a third of a grain as a subcutaneous injection in a case of chronic jaundice with intense itching. It occurred to me that a drug which so uniformly was productive of speedy diaphoresis must profoundly modify the functions of the skin for the time being, and might in doing so relieve the itching which has hitherto, in my experience, defied treatment. It did so quite beyond my expectation, and kept the patient comfortable until she died. In the next case it was equally successful. The patient had one-third of a grain injected subcutaneously many times, and always with this result, that the first twenty-four hours he was quite free, the second he was fairly free, and the third day he was getting bad again, and the dose had to be repeated. I next tried it on an old lady who suffers from very frequent attacks of gall-stones. She is equally decided as to the relief she obtains, but her pleasure is to some extent marred by her skin being for the time converted, as she describes it, into the similitude of that of a laundrywoman. I have had six cases in all, and in none has it failed; and when we consider that really there is nothing that can be relied upon to relieve this most distressing feature of jaundice, I hope the suggestion may prove of service. The other class of cases in which it seems to me to be occasionally of value is where the lightning pains of locomotor ataxia are severe. I have two or three times found it useful in these cases when many other means had been tried and failed.

Of *antipyrin* I am almost afraid to speak, for just now it is such a fashionable drug that it would well-nigh be easier to say for what diseases it had *not* been recommended than to enumerate those for which it had. But it does seem that it is likely to achieve a permanent name for abnormal nerve discharges of various kinds, and chiefly those that have been, I think happily, designated

as the "paroxysmal neuroses." For instance, there can, I think, be no doubt that it is a very valuable means of combating some migrainous headaches. From what others have told me, and from what I have occasionally seen myself, it would appear to be a remedy of value in some cases of dysmenorrhœa—cases which might, I think, not unfairly be designated as pelvic catamenial neuralgia, if the gynecologists will forgive me for venturing to have an idea outside my own lines. \* \* \*

Antipyretics have been advocated by some in enthusiastic terms for the sudden and sharp febrile states that are met with in childhood, and I am far from saying that in such they may not be of use. I believe they may be of great use in that special condition known as hyperpyrexia—or rather in the states which threaten it—because in it the rise is very sudden, the attack is of the nature of a sudden storm-blast, and the tissues may be irreparably withered by it. In the same way in children sudden fever may do irreparable damage to their succulent tissues, and a dose of antifebrin or antipyrin may avert this. Nevertheless, it will occur to all of us that the attacks in which they seem to be so beneficial are just those whose nature is to subside as suddenly as they come, and I do not think that the evidence they afford is as yet conclusive in favor of these remedies.

But to go back to antipyrin in its power to depress abnormally high temperatures and to dissipate a migraine or pelvic neuralgia, we have evidence of some powerful influence on the nervous centers, and it is not far thence to the question, Might it be useful in other neurotic states? And it has been tried of late in two very troublesome ailments, namely, chorea and whooping-cough. I have no personal experience to relate as regards the latter, but, it has been spoken of very favorably by Sonnenberger, Wendt, and Genser. Sonnenberger has tried it in about seventy cases, the

dose varying from one-seventh of a grain in very young children to fifteen grains in adults three times a day. Wendt followed the former writer's suggestions, and states that the drug served him better than any other; he claims no cures, but it favors an easy course to final recovery, a mitigation of the paroxysms and a reduction in their number, and certainly a freedom from complications. Genser also asserts that antipyrin always diminishes the number of the coughs in the twenty-four hours, and controls the intensity; the duration of the disease seldom extended over twenty-four days—a very good record, as all will allow, if it be borne out by other observers. The mean dose was a grain and a half a day for each year of age; but I should say myself that the drug might be pushed to the extent of  $1\frac{1}{2}$  grain per year three or four times in the twenty-four hours if necessary.

As regards chorea, I can speak—to some extent and tentatively—favorably. I have given it in the last five cases that have come under my observation. In four the result may, I think, be considered to have been good. Thus a girl, aged 8, was admitted for her fourth attack of chorea. It was general and rather severe, and she had mitral disease (probably contraction) also. She was put upon two-grain doses of antipyrin three times a day, and after five days it was noticed that there was a marked improvement in the choreic condition, the face muscles especially being quieter. The dose of the drug was then increased to four grains three times a day. She continued to improve for ten days, and by that time the movements had lost all their violence, when the drug was discontinued for arsenic. The minor movements remained for some time, as is usually the case with any treatment. She left the hospital practically well after seven weeks.

In another case a boy of 12, who had had rheumatic fever twice and chorea on and off for a long time, was admitted to Guy's Hospital with marked but not violent

chorea of face and extremities and aortic regurgitation. He was put upon five-grain doses of the drug three times a day on the 24th of the month; on the 29th the movements were noticed to be less marked, and on the 31st they were not noticeable, and he remained well afterwards. He took the drug for twelve days altogether, and it was then discontinued because of an erythematous eruption that appeared. He was in the hospital three weeks.

A third case, a girl of 8, under the care of Dr. Cooper, of Rotherhithe—a very bad case indeed, associated with much wasting, imbecility, paralysis, and pericarditis—was given also five grains three times a day. She took it for eight days, and was by that time so much improved that it was discontinued for iron and digitalis. The improvement began within forty-eight hours after the commencement of the antipyrin.

A fourth case, now in Evelina Hospital, a girl of  $9\frac{1}{2}$ , came in on November 26th with general rather violent chorea. I gave her five-grain doses every six hours, and on the 29th increased it to ten grains every six hours. On December 3d she was lying in bed hardly choreic. In this case, however, although the chorea was manifestly better, she suffered from antipyrin poisoning. After three or four days a copious measly rash appeared, with high fever and albuminous urine, and then it was necessary to stop the drug.

The other case, under the care of Dr. Steele Perkins, of Streatham, was made worse by the treatment, and it was given up after ten days. I shall not indulge in any exuberant anticipations, but, remembering how very troublesome chorea is, I think there is enough evidence at hand to make us believe that, at any rate in some cases, antipyrin may prove of service. Legroux and Dupré have given it in twenty cases in doses of about seven grains five or six times a day, and they conclude that it is one of the most certain and harmless

remedies for chorea, the improvement usually commencing in four to six days.

Before closing, perhaps I may be allowed to add a word not upon a new remedy, but upon an uncommon method of administration of an old one. I refer to the subcutaneous injection of *strychnine*. There is, of course, nothing novel in this. Nevertheless, I am under the impression that *strychnine* is not often administered in this fashion. Dr. Habershon has advocated its use thus in cases of cardiac failure, and during the past year I have had three troublesome cases of more or less general paralysis that have, for such cases, rapidly improved by its means. One was a case of peripheral neuritis due to alcohol and lead poisoning combined. He was in a very tremulous condition when admitted. Many of his muscles were much wasted. He had a good deal of pain in the course of various nerves, and he was both sleepless and demented. Various drugs were administered, and he was assiduously galvanized, but he became decidedly more powerless. By-the-bye he had a subcutaneous injection of hydriodate of hyosine, first  $\frac{1}{200}$  of a grain and then  $\frac{1}{100}$ , and this certainly seemed to quiet his nocturnal delirium, and procure him sleep. On November 4th I ordered him  $\frac{1}{60}$  grain of *strychnine* to be injected hypodermically twice daily. On the 14th it was increased to  $\frac{1}{30}$ , and by the 31st he was taking  $\frac{1}{24}$  twice daily. By this time it was noted that the movements of the patient's hands and arms were much more lively, and there was a gain in the grasping power of both hands. From this time he made continuous improvement. The injection was continued for another month, and was then omitted, chiefly because it caused, or he thought it did, severe pain in his ulnar nerves, which, he insisted, came on soon after the injection, and caused him great misery for several hours afterwards. He had had this pain before the commencement of the injections, and my clerk, Mr. McIlwaine, had doubts about

the reality of the cause, but the man was very positive, and I think he was very probably correct. His ulnar nerves were clearly those most affected by his disease, and it is fair, therefore, to suppose that the remedy acted upon them in excess.

A second case was one of general paralysis, dysphagia, diaphragmatic palsy, and reaction of degeneration in the muscles in a young man aged 27. All the history that he could give was that, being a carman, and of late carrying sacks of coal, he had, a month before his admission, felt generally out of sorts and easily fatigued. A week later his finger-tips became numb, and then his toes, and gradually he lost all power in his legs, and then in his arms. He was at first given iodide and perchloride of mercury, and he steadily got worse. Then he had three-minim doses of liq. *strychniæ* given internally; but, as he was steadily going down hill, and was swallowing and breathing so badly that I quite feared for his life, I changed the internal administration of *strychnine* to the hypodermic method after a week. He had  $\frac{1}{50}$  grain injected night and morning. This was commenced on the fifth, and on the ninth the report stated that there was a marked improvement in the strength of the right arm, and there was considerable improvement in sensation. By the thirteenth he was beginning to have slight control over his legs. His pains, before rather troublesome, were not so severe, and the patient seemed altogether better; and he rapidly improved from that time, so that at the end of a month he was able to get up and about feebly. He is now, many months later, quite well. It might be added that the real nature of the case still remains obscure to me. The completeness of the paralysis, coupled with his occupation, and a doubtful thickening and prominence over the second cervical vertebra, made me think at first of some cervical pachymeningitis, but I subsequently inclined more to the diagnosis of peripheral

neuritis, albeit the cause of it could not even be suggested.

I must only inflict one other case upon you. It is that of a man aged 41, who was admitted for loss of power in his right leg, and incontinence of urine. He came in with these symptoms, and there was, on careful testing, some loss of sensation in the opposite leg. His bladder was running over. This and the paralysis made one suppose that there was disease in the cord, rather than outside it, and I feared he had some transverse myelitis, worse on the right side. He had not been in the hospital long when he lost the use of the other leg. He had at first some iodide of potassium and perchloride of mercury. But not finding any marked improvement after a fortnight, I changed it to two-minim doses of the liquor strychnie of the *British Pharmacopœia*, twice a day, and at the end of five weeks he was up and walking about the ward. He is getting about fairly well now, with some clonus and exaggerated reflexes on both sides; but his chief trouble is frequent micturition, possibly due to some slight vesical irritation still remaining.—*James F. Goodhart, M.D., in the British Medical Journal.*

**The Relative Value of Opium, Morphine, and Codeine in Diabetes Mellitus.**—Since Pavy's recommendation of codeine as a remedy having advantages over opium and morphine in the treatment of diabetes mellitus, codeine has been much used, and has even to a large extent displaced opium and morphine in the treatment of this disease.

There are at the same time no clear pharmacological data in support of this preference. Indeed, the data are not even such as to suggest it; for notwithstanding assertions of a like superiority in the relief of various symptoms of other diseases, the facts, so far as we know them, seem to show that, pharmacologically, codeine is in its most important actions merely a weak morphine. This conclusion is supported

by the circumstance that in its chemical structure it differs from morphine only in containing methyl—that in fact it is morphine diluted by the addition to it of the relatively inactive substance, methyl. In regard to its therapeutic effects in those conditions, other than diabetes, in which it is now commonly used, I have also failed to obtain any evidence that it acts otherwise than a weak morphine; for example, in the relief of cough, the production of sleep, or the removal of pain whether in the abdomen or elsewhere.

These considerations, as well as the special suitableness of the disease for such comparison, and the probable value to therapeutics of any decisive results that might be obtained, induced me, several years ago, to make some observations for the purpose of comparing the effects of codeine with those of opium and morphine upon the more important of the phenomena of diabetes mellitus.

Observations of a detailed character have been made on four patients, with results of a concordant kind; but I propose to describe, by way of illustration, the results that are of most importance in one of these patients only, on whom, incidentally, some observations were also made with atropine.

This patient, M. B., aged 26, came under my care in the Royal Infirmary of Edinburgh, on October 5th, 1887, suffering from thirst and frequent micturition. None of her immediate relations had suffered in a like manner. She was a nursery maid, and had lived in comfortable houses, and been supplied with abundant and good food. The first symptom of her illness was thirst, which showed itself about seventeen months prior to her admission, and had led to the discovery that she was suffering from diabetes mellitus. She was treated for this illness, but without much effect, and she soon became very weak, and lost flesh, so that in twelve months her weight was only eight stone, whereas im-

mediately before this illness it had been ten stone. Notwithstanding careful and strict dieting, the emaciation advanced, and she weighed only seven stone four pounds when she entered the Royal Infirmary. She was then dyspeptic, and moderately anæmic, but she did not suffer from constipation, nor was the liver enlarged. There was no disease of the respiratory or circulatory systems. The eyes were hypermetropic, the skin dry, and the temperature slightly subnormal.

The patient was in the hospital from October 6th, 1887, to July 10th, 1888, and the observations to which I shall now draw attention occupied the whole of this time. The general plan followed was to allow the patient ordinary diet for one period; then to adopt a carefully restricted diet; then this diet with codeine, in doses varying from half a grain to five grains thrice daily, and for a short time with one-sixtieth and one-thirtieth of a grain of sulphate of atropine thrice daily; then restricted diet alone; then restricted diet, first with opium alone, in doses of half a grain to one grain and a half, and afterwards with opium and sulphate of atropine; and, finally, restricted diet with hydrochlorate of morphine. The administration of morphine was not preceded by an interval in which restricted diet alone, and without any medicinal treatment, was adopted; as in the period immediately preceding that of the administration of morphine, in which no medicine was given, the patient had become dull, languid and sleepless, she had complained of sickness and loss of appetite, and in a few days had been unable to leave her bed.

During the whole of the nine months in which the patient was under observation and treatment, with the exception of only a few days occurring now and then, the quantity of fluid drunk, the quantity of urine voided, and the specific gravity of the urine and the amount of urea and of sugar contained in it, were each day recorded. The weight of the patient was

ascertained from time to time, and a careful record was made of her diet, and also of her general state of health. The daily observations are too numerous to be communicated to the Section.

To state the results in another way:

1. The case was one in which mere restriction of diet did not have so marked an effect as occurs in many cases. The prospects of successful treatment were not, therefore, very hopeful.

2. Codeine had a very decided effect in reducing the quantity of urine, sugar, and urea. When contrasted with the reduction produced by restricted dietary alone, the addition of nine grains of codeine in the day lessened by about one-third, and of fifteen grains of codeine in the day by about one-half, the quantity of fluids drunk, and the quantity of urine, sugar, and urea, and it slightly reduced the specific gravity of the urine.

3. The addition to fifteen grains of codeine of the one-twentieth, and afterwards of the one-tenth, of a grain of sulphate of atropine, caused a still further, though not a large, reduction.

4. After the administration of codeine had been stopped, an interval of six days on restricted diet, without any medicinal treatment, was not sufficient for a deterioration to occur to the conditions present before codeine had been given.

5. The subsequent administration of half a grain of opium thrice daily produced a considerable reduction. With one grain of opium thrice daily the reduction was to less than one-half, when contrasted with the amounts during a restricted diet alone, and before any medicinal treatment had been adopted. One grain and a half thrice daily produced a further reduction; and when to it was added one-twentieth of a grain daily of sulphate of atropine, a still further reduction occurred.

6. Restricted diet, with one-third of a grain of hydrochlorate of morphine thrice daily, or one grain daily, also produced a

marked reduction; and the conditions relative to the points under investigation were even more satisfactory than when fifteen grains daily of codeine were being administered. While this small quantity of morphine was being taken, the fluids drunk by the patient were only one-third, the urine and sugar less than one-half, and the urea about one-half of the amounts during the period of restricted diet alone, before medicinal treatment had been commenced.

As to the general state of the patient during each of these conditions of treatment, restriction to an antidiabetic dietary produced improvement in thirst and mental activity. So long as the quantity of codeine was limited to six grains daily, this improvement was maintained; but when nine grains, and even more, when fifteen grains were being taken daily, the appetite failed, she became listless and apathetic, vertigo was occasionally experienced, and the patient remained for a considerable part of each day asleep in bed. The addition of atropine to the codeine did not produce any improvement, but rather added to the discomfort by impairing vision; and even when only one-sixtieth of a grain was being taken thrice daily, the pupils became slightly dilated. When codeine and atropine were stopped, and a restricted dietary alone adopted, the health was not improved. The symptoms referred to became, indeed, worse, and prevented a prolongation of the period of restricted diet without medicine to the extent that seemed desirable before a new plan of treatment was adopted. When opium was now given a marked improvement occurred, but the larger doses caused some drowsiness during the day. With one grain daily of hydrochlorate of morphine the condition of the patient became more satisfactory. The drowsiness soon disappeared, the appetite improved, and she became sufficiently active to engage in ward work. Constipation of the bowels was not produced by any of the medicinal agents employed.

A consideration of these averages seems to show that, under a daily administration of one grain of hydrochlorate of morphine, the quantity of fluids drunk, and of urine, urea, and sugar voided, was rather less than when three grains of opium, and decidedly less than when fifteen grains of codeine were being taken. In three other cases in which I have instituted a comparison between these substances in diabetes mellitus, morphine also showed a marked, though not so great, superiority over codeine. After this note had been prepared, I have seen a recent paper by Dr. Bruce, of London, in which similar results were obtained in two very carefully observed cases. So far as I know, also, the favor with which codeine is regarded in this disease has not been supported by any observations calculated to show its value relatively to opium or morphine so clearly as in the cases to which I have referred.

The evidence, therefore, seems to indicate that codeine is a less powerful remedy in diabetes than either opium or morphine, and to confirm the view that in its therapeutic value it ranks as a weak or diluted morphine.

The conclusion receives an importance (no doubt a subsidiary one) from the circumstance that codeine is about three times as expensive a substance as morphine. The great demand for it has led to its being manufactured from morphine so largely, that probably one-fourth of the codeine in the market is an artificial substance. When we consider the large doses that are required in diabetes mellitus, and the generally protracted duration of this disease, we are, I think, justified in asking for more clear evidence of its superiority over morphine than has as yet been produced.—*Thomas R. Fraser, M.D., in The British Medical Journal.*

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**Guy's Hospital Lying-in Charity.**—In volume XLV of *Guy's Hospital Reports*, re-

cently issued, may be found the sixth report of the lying-in charity of the Hospital, from October 1, 1875, to September 30, 1885, collated from the records by Dr. P. Horrocks, and published by the collator and Dr. Gallabin. The report is interesting on account of the number of cases confined in the Hospital during the ten years—25,489, or an average of 2,548 a year.

The analysis of births is as follows: 25,489 women attended, with 25,777 births; single births 25,201; dual births 558, triple births 18. The viable children living at birth were 24,640, or 96.46 per centum; viable children stillborn 983, or 3.84 per centum; undescribed 13—total 25,636. Non-viable children living (few minutes to several hours) 17; non-viable children stillborn 124. Of the viable children 13,520

were males; and 12,097 females, the ratio being as 100 to 89. In 19 the sex was undescribed. Of the non-viable children 56 were males, 34 females, and 51 undescribed.

Of the 24,582 viable living children of whom the sex is given, 12,941 were males and 11,641 females, or as 100 to 90.

The presentations were as follows:

Presentation.	Males.	Females.	Total.	Per cent.
Vertex.....	12,622	11,316	23,938	97.38
“ and head..	36	20	56	.23
Breech.....	153	178	331	1.34
Foot.....	60	72	132	.54
Face.....	41	32	73	.30
Upper extremity	7	5	12	.05
Transverse.....	2	7	9	.04
Brow.....	8	4	12	.05
Funis.....	12	7	19	.07

Of the viable stillborn children 547 were males and 425 females, or as 100 to 78.

The presentations were as follows:

Presentation.	Condition.	Males.	Condition.	Females.	Total.	Per cent.	
Vertex	{ Full term.....	326	{ Full term.....	246	285	652 = 67.1	
	{ Decomposed.....	3		{ Decomposed.....			6
	{ Premature.....	38		{ Premature.....			33
Vertex and hand	{ Full term.....	5	{ Full term.....	4	5	11 = 1.1	
	{ Premature.....	1		{ Premature.....			1
	{ Full term.....	57		{ Full term.....			62
Breech	{ Decomposed.....	1	{ Decomposed.....	2	67	133 = 13.7	
	{ Premature.....	8		{ Premature.....			3
	{ Full term.....	44		{ Full term.....			30
Foot	{ Decomposed.....	1	{ Decomposed.....	0	34	92 = 9.5	
	{ Premature.....	13		{ Premature.....			4
	{ Full term.....	4		{ Full term.....			3
Face		4		3		7 = .7	
Upper extremity	{ Full term.....	15	{ Full term.....	7	7	23 = 2.4	
	{ Premature.....	1		{ Premature.....			0
	{ Full term.....	7		{ Full term.....			1
Transverse		7		1		8 = .8	
Brow		2		0		2 = .2	
Funis	{ With vertex.....	12	{ With vertex.....	12	23	44 = 4.5	
	{ " breech.....	2		{ " breech.....			1
	{ " foot.....	5		{ " foot.....			6
	{ " arm.....	5		{ " arm.....			3
	{ " transverse..	1		{ " transverse..			1
		547		425		972	

There were 80 face presentations, giving 73 living and 7 dead children. In 74 cases delivery was accomplished by natural efforts, 5 children dying, one being an anencephalous foetus. In 6 cases instruments were used, the forceps in 4, the cephalotribe in 2. In the forceps cases all the children were born alive, though one died within twenty-four hours. In two cases the forceps were removed after some traction had been made, and the cases were left to nature. Excluding the two anencephalous fetuses, there were 5 deaths in 78 cases of face presentation, or 6.4 per centum.

The following table shows the proportionate number of the several presentations for the whole number of viable children, and the percentage of such children still-born under each presentation:

Presentation.	Per cent.	Percentage stillborn.
Vertex.....24,590	= 96.22	..... 2.7
Vertex and hand.....	67 = .26	..... 16.4
Breech.....	464 = 1.82	..... 28.7
Foot or knee.....	224 = .88	..... 41.1
Face.....	80 = .31	..... 8.7
Upper extremity.....	35 = .14	..... 65.7
Transverse.....	17 = .07	..... 47.0
Brow.....	14 = .05	..... 14.3
Funis.....	63 = .25	..... 69.8
	25,554	100.00

The death-rate in the viable children in the present report is 3.84 per cent. In the last report the death-rate in children was 4.08, in the last but one 4.6, and in the preceding twenty-one years it was 5.2 per cent. In connection with this great improvement, it is interesting to note the greatly increased use of the forceps. Not only have they been used twice as often as in the last series, but recourse has been had to their use at an earlier period of the delayed labor, and thus the children have had a better chance.

Taking foot and breech presentations together, the children stillborn are in the proportion of 1 in 3. In the last report the proportion was 1 in 2.5, and in the last but one 1 in 2.7. There were 279 twin cases, or about 1 in 91 of the whole number of women delivered, or about 1.09 per

centum. In 89 cases both were males, both females in 88, and one of each in 102 cases. The presentations were:

Presentations.	
Vertex in both.....	125
“ and vertex with hand.....	6
“ and breech.....	72
“ and foot.....	36
“ and upper extremity.....	3
“ and transverse.....	2
“ and face.....	1
Breech in both.....	12
“ and foot.....	7
“ and upper extremity.....	1
Foot in both.....	8
Not given.....	6

279

There were 63 cases of funis presentation, with 19 living and 44 dead children. In the last report only 8 were living out of 62. Of the present series there were 36 vertex presentations, 16 breech or foot, 9 upper extremity and 2 transverse. In 7 cases, of which 4 were vertex, 1 transverse, 1 upper extremity, and 1 breech, the funis had ceased to pulsate before the arrival of assistance. In 16 cases version was performed; 11 podalic, 2 cephalic, and 3 not stated. In one case of podalic version the child was alive; all the others were still-born. Forceps were used in 8 cases, of which 6 were vertex and 2 upper extremity. In one of the vertex cases the child was saved; the others were dead. The funis was replaced in several cases, and in 4 cases it remained in the uterus. Of these 4 cases, 3 were vertex and 1 upper extremity, the last being stillborn, but in the 3 vertex cases the children were saved. Craniotomy was performed in 4 cases.

The brow presentations numbered 14, with 12 living and 2 dead children. Version was performed in two cases, both children dying; in one of these the forceps was used to the after-coming head. The forceps was used in 1 case, and the child born alive. Eleven cases were left to nature, all being born alive, the presentation being converted into a face in some cases. It appears that the child has a much better chance in brow presentations if left to nature or if forceps are used.

The upper extremity presented in 44 cases, and in 9 the funis was prolapsed. There were 19 transverse presentations, and in 2 the funis was prolapsed. Of the 63 cases, 6 were completed by natural efforts, 4 by spontaneous evolution, all stillborn, one by spontaneous version, and one case was delivered spontaneously, but by what method is not stated. Version was performed in 50 cases, 18 children being living and 32 stillborn. Podalic version was performed in 45 cases, all the mothers recovering save one. In the 3 cephalic version cases one child was living and the other two were dead. In 2 cases the kind of version is not stated. Of the 63 cases, 22 children were living and 41 were dead. Comparison with the last report shows that the number of cases of presentation of the upper extremity and transverse presentations has decreased, and that the mortality of the children is very much less. In the last report deaths of two mothers were recorded; in this only one.

Out of 25,636 births of viable children, protracted labor was terminated by forceps in 274, or 1 in 93—about 1.07 per centum. In the last report, out of 23,591 women attended, 121 protracted labors were terminated by forceps, or 1 in 97—0.51 per centum. In the present series, therefore, the forceps have been used more than twice as often as in the former series; but this report includes the cases in which forceps were used for accidental hæmorrhage and for eclampsia, which were omitted from the last report. The increased use of the forceps has undoubtedly saved many mothers a great deal of pain, reduced the mortality of the children, and probably also of the mothers; but it did not decrease the number of craniotomy cases, so that it will be seen that forceps have been used more frequently in cases of uterine inertia and slight obstruction, which might perhaps have been terminated by natural efforts alone if left long enough.

Of the 274 forceps cases, 11 mothers

died; 6 from septicæmia, 3 from hæmorrhage, 1 from bronchitis, and 1 from heart disease, making the mortality 4 per centum, practically the same as in the last report. Of the 274 children, 237 were living, 36 dead, and 1 undescribed. Excluding the child about which there is no statement, we have 36 dead out of 273, a mortality of 13.18 per centum, or almost 1 in 7.6. Excluding one whose sex is undescribed and the one of which there is no information, we have 25 males dead out of 166 cases, a mortality of 15.06 per centum, or 1 in 6.6, while we have 11 females dead out of 106, a mortality of 10.37 per centum, or 1 in 9.6. In the last report the general infantile mortality was 24 per centum (nearly), the male mortality 30 per centum (nearly), and the female mortality 15 per centum (nearly). The increased use of the forceps in such cases does not add any dangers to the mother or child.

Forceps were used at the brim 92 times; 6 mothers and 18 children died. Version was performed when the head was at the brim in 33 cases, 5 mothers and 29 children dying, thus showing that the forceps give a much better chance to both mother and child than version. A tabular statement of all the forceps cases is given in the report, as well as details of specially interesting cases.

Version was performed in 90 out of the 25,636 viable cases, equal to 0.35 per centum, or nearly 1 in 285. Podalic version was the method chosen in 80 cases, cephalic in 3, and in 7 cases the record is imperfect. The version was performed for malpresentation in 49 cases, in most of which some part of the upper extremity presented. Of these cases 29 children (20 males and 9 females) were stillborn, and 20 (9 males and 11 females) were saved. Placenta prævia, with its accompanying hæmorrhage, was the cause of interference in 26 cases, of which 23 (14 males and 9 females) were stillborn, and 3 (2 males and 1 female) were saved. Version was performed for

contracted pelvis in 14 cases, in most of which the conjugate diameter of the brim was chiefly or entirely at fault; in several the forceps were first tried in vain. Of the 14 cases, 11 (7 males and 4 females) were stillborn, and 3 (1 male and 2 females) were saved. In one case accidental hæmorrhage necessitated quick delivery, and version was performed. The child died. In 8 cases version followed by traction failed to deliver, and craniotomy of the after-coming head was necessary.

Of the 90 cases of version, 26 children (12 males and 14 females) were born alive, and 64 (41 males and 23 females) were stillborn. Excluding the 8 cases in which craniotomy was performed, there were 56 stillborn children in 82 cases of version—nearly 68.3 per centum, or 1 in 1.46. Of the mothers, 5, or 5.5 per centum, or 1 in 18, died; 4 were placenta prævia cases, and 1 was a case of contracted pelvis. Of the 5 deaths, puerperal septicæmia with peritonitis was the cause in 2 cases; puerperal septicæmia and hæmorrhage in 1 case; hæmorrhage in 1 case, and internal hæmorrhage (?) in 1 case. In all 5 cases the children were stillborn. Recently in placenta prævia cases, the forceps have been used instead of version, with greatly improved results to both mothers and children. In most cases the combined internal and external method, as described by Braxton Hicks, was adopted.

Craniotomy was performed 24 times, or 1 in 1,074, or in 0.09 per centum of the cases. In the last report the proportion was 1 in 1,310. In 7 of the 24 cases the children were dead before the operation was begun, in 15 cases life was a matter of doubt, and in but 2 cases was the child known to be alive. "At the same time, it must be remembered that in some cases the child's life was placed in fatal jeopardy by attempts at delivery prior to the use of the perforator." Four of the mothers died, one (two?) from rupture of the uterus, and two from suppurative peritonitis. The

causes that led to the craniotomies were: narrow pelvis 16 cases, hydrocephalus 2, large child, atresia vaginæ, and tedious labor 1 each, not stated 3. In 9 cases the forceps were tried in vain; in 6 cases the forceps and then version were tried in vain; and in 2 cases version alone was tried.

There were 5 cases of rupture of the uterus or vagina, or 1 in 5,098. All the patients died, including 2 in whom laparotomy was performed.

The number of cases of post-partum hæmorrhage is 342, or 1 in 74, or 1.3 per centum; 14 mothers died, and 38 children were stillborn. Of the 14 maternal deaths, 7 were from hæmorrhage alone, 4 from subsequent septicæmia, 1 from scarlet fever, 1 from erysipelas, and 1 from heart disease. In 14 cases the hæmorrhage was arrested by injecting into the uterus a solution of perchloride of iron (1 part of the strong solution to 3 or 8 parts of water); 13 of these cases recovered. In the majority of cases ergot was given, a teaspoonful of the powder or of the liquid extract, the hæmorrhage ceasing very soon, except in a few cases. The use of ice in the vagina was unsatisfactory. In 35 cases the placenta was retained, and had to be removed by introducing the hand into the uterus; in 30 of these the placenta was adherent, and detached in 5. In 6 cases the mothers died. In 31 of the 96 reported cases more or less pyrexia, with accompanying febrile symptoms, followed; in 10 cases there had been antepartum hæmorrhage; in 10 cases version had been performed; in 33 cases the forceps had been used.

Placenta prævia occurred in 51 cases, or 0.2 per centum. Of the cases, 14 were complete, 22 partial, and 15 doubtful or not stated. There was more or less hæmorrhage in 50 cases; 9 mothers died, or 17.6 per centum—nearly 1 in 6; 4 from hæmorrhage, 4 from septicæmia, and 1 from rupture of the uterus; 34 children were stillborn, or 66 per centum. In 2 cases

the patients died undelivered. Version was performed in 26 cases. "There can be no doubt that when a placenta prævia has been found, it is best to plug the cervix in order to stop further hæmorrhage. Barnes's bags answer well because they dilate the os at the same time. The case should be carefully watched, and a larger bag put in as soon as may be required. Then by rupturing the membranes, and, if necessary, separating the placenta from the lower zone, and delivering the child by forceps or version the risk of further loss of blood is diminished. If the vertex is presenting, the use of the forceps gives the child a better chance than version, but inasmuch as the labor is often premature, the ordinary forceps are apt to slip off."

There were 61 cases of puerperal fevers, or 1 in 418, or 0.24 per centum; 44 were fatal, making the mortality from this cause 1.7 in 1000. It is the rule to suspend an externe from his duties whenever one of his cases develops serious symptoms. In 1884, during the absence of the assistant obstetric physician, one of the externs was allowed to be a dresser in the surgery wards at the same time. No less than three of the women attended by him died of puerperal fever.

The principles of treatment are to remove any source of infection, wash out the uterus and vagina as necessary, and give a purge at the outset, with opium and hot fomentations. Quinine in 5 grain doses has been used as an antipyretic, and antiseptic measures are used.

In regard to maternal mortality, there were 86 deaths, or 3.4 per 1,000, or 1 in 296. In the last report the mortality was 4.4 per 1,000. Considering the poverty and destitution of most of the women, this further reduction of an already low mortality is very satisfactory.

*A Practical Point in the Treatment of Pott's Disease of the Spine.*—In a paper on

this subject, read before the American Orthopædic Association at its annual meeting, September 18, 1888, Dr. A. B. JUDSON says: The treatment of Pott's disease is always open to amendment. I propose, therefore, in order to assist the practitioner, a simple rule, as follows: The efficiency of the apparatus used is to be measured by the condition of the skin covering the projection.

A few words in explanation will not be out of place. It is premised that the object of mechanical treatment is to make pressure on the projection with the threefold purpose of (1) enforcing fixation of the bones involved, (2) transferring pressure from the diseased bodies to the healthy processes, and (3) lessening the deformity. If we were dealing with the skeleton deprived of its integument there would practically be no limit to the pressure which might be applied to the projection. But the interposition between the apparatus and the vertebral column of the sensitive skin places a peremptory limit to the degree of force which it is possible to apply. The rule may therefore read: The apparatus may be considered as having reached the limit of its efficiency if it makes the greatest possible pressure on the projection compatible with the comfort and integrity of the skin.

This rule may be followed with perfect regard to the comfort and convenience and relief of the patient. If, contrary to common sense, the apparatus is fastened at once as tight as it can be borne, the skin will react speedily with pain and ulceration. But if the pressure is lightly applied at first, as may be conveniently done with apparatus constructed with this in view, and gradually and carefully increased from time to time, it will be found as the weeks and months go by that the skin has become indurated without losing its integrity or causing inconvenience, and its condition will be unimpeachable evidence that, so far as mechanical means go, the patient is

receiving a full measure of the benefit of treatment.

Through the negligence of the nurse or the willfulness of the patient, apparatus designed for use in this way may produce, and occasionally has produced, abrasion and ulceration. But this should not be considered a good reason for condemning the apparatus. It is well to bear in mind that the disease in question is perhaps the most insidious in its progress and disastrous in its results of all the affections to which the young skeleton is liable. Shall we not make use of the most efficient method at hand and, if necessary, redouble our carefulness and painstaking in order to avoid incidental excoriation?

There are methods of treatment to which the rule proposed does not apply very closely. I refer to those methods which have for their principal features suspension and plastic dressings. If the patient is suspended and plaster-of-paris applied, the pressure is diffused rather than concentrated, and changes in the skin are less marked and it is less easy to adjust the direction and degree of pressure on given points, while it is especially easy and convenient to do this with a brace constructed of tractable steel. I would not decry the use of plastic dressings in the treatment of this affection. They are daily affording comfort and relief to numbers of sufferers who would otherwise have nothing done for them. They will continue, perhaps, to be used by the general surgical practitioner. But I think the specialist in orthopedic practice can do better. He has a better method at his command in the use of tractable steel modified to meet the varying requirements of the case to which he devotes himself with the patience and ingenuity which are a part of his equipment.

To the practitioner of this class I commend the rule suggested above to the effect that the question of the efficiency of the apparatus is to be determined by the con-

dition of the skin covering the projection, a rule which many of us have doubtless followed in practice, and which it can do no harm to have expressed in words.

#### *Cork as a Compress in Hæmorrhage.*—

The surgeon frequently finds himself at a loss for a ready means of controlling certain hæmorrhages which, although seemingly insignificant at first, become quite serious in a very short time. This state of things is of course more likely to occur in the experience of the country surgeon than in that of his more fortunate city brother. In any event we are quite sure that the surgeon can find nothing so convenient and reliable for controlling hæmorrhages of the scalp, palmar arch, hands, feet, etc., and the oozing which often follows the too early or accidental removal of the remains of the umbilical cord, as the cork compress. The degree of resistance afforded by the cork is perhaps a little greater than that of one's finger, but the pressure secured by it is always uniform and reliable. The mode of its application is very simple. For scalp wounds a circular tap, about one quarter of an inch thick, is cut off the end of a cork about one inch in diameter, and secured to a bandage by a few drops of ordinary sealing wax. The section of cork thus prepared is placed over the bleeding vessel, and firmly secured by passing the bandage around the head in the usual manner as often as is necessary. For umbilical hæmorrhage the same description of cork and bandage is used, but the center of the cork is slightly scooped out for the accommodation of a small pledget of styptic cotton. By this means we have been able to control this very troublesome oozing when all other means known to us had failed. For wounds of the palmar arch the cork is cut in half, longitudinally, the flat surface secured to the bandage by a few drops of sealing wax, and the circular or rounded side pressed firmly along the course of the artery on the proximal

side of the wound. The bandage is then passed firmly around the wrist often enough to secure the desired amount of pressure upon the wounded vessel. In the same way the compress is applied in wounds of the hands and feet. Patients never complain of any discomfort from the pressure thus applied.

Our experience with this simple method of compression prompts us to recommend it as a safe and efficient means of controlling superficial hæmorrhages of every description where ligation is unnecessary, inconvenient, or not desired.—*International Journal of Surgery*, March, 1889.

**Opening Deep Peri-Rectal Abscesses by Perineal Incision.**—H. ZELLER (*Beiträge zur klinische Chirurgie*, Bd. iii., Hft. 2), referring to the abscesses above the pelvic diaphragm, states that these are usually found in the prostatic and peri-prostatic connective tissues. Abscess of the prostate itself is most frequently the result of irritation in the urethra; rarely by propagation of an ulceration from the rectum. Abscesses occurring primarily in the peri-prostatic connective tissue, and involving the prostate secondarily arise from extension of inflammation, or infection from neighboring organs. Further, ulceration of the bowel high up (stercoraceous abscess) may produce abscess in this locality. Abscesses originating in the vertebræ seldom find their way to this locality. Lastly, a series of cases is mentioned, in which the cause is not noted.

Rupture of an abscess purely prostatic in its origin occurs oftenest in the urethra, and at times is characterized by an intermittent discharge of pus; it very seldom breaks through into the bladder. Abscess of the peri-prostatic tissues open oftenest into the rectum; next in frequency into the urethra, and often into both rectum and urethra. They seldom point spontaneously towards the perineum, and are quite as likely to follow a direction towards the in-

guinal region, the ischio-rectal fossa, or the obturator foramen.

The prognosis of deep perineal abscesses is unfavorable. In 114 cases, 70 were cured, 7 terminated in fistulæ, while 34 died. The importance of early interference is insisted upon. The perineal incision recommended by Lallemand, even when no prominence in the perineum is observed, and when but slight arching toward the rectum can be felt, is recommended.

When decided bulging and fluctuation are observed in the rectum, there is a temptation to incise at this point. The fact that the rectal opening cannot be made sufficiently large for purposes of free drainage; that it is often not at the most dependent portion of the abscess; and further, the impossibility of antisepsis, and the risk of establishing a urethro-rectal abscess in the cases in which spontaneous opening into the urethra also occur;—these considerations together with the danger of hæmorrhage, will impel the surgeon to adopt the course recommended by the author.

#### **Tuberculosis of the Sacro-Iliac Joint.**—

DR. WELLER VAN HOOK, in a paper on this subject, draws the following conclusions in regard to treatment:

1. Sacro-iliac disease is not directly amenable to treatment by drugs. They should, nevertheless, be employed by the surgeon in all forms of the disease when they are likely to improve the general condition of the patient.

2. Counter-irritation is indicated when there is pain, lameness or tumefaction at the joint without abscess formation. The actual cautery seems to be the most effective form.

3. Mechanical rest, which is here also physiological rest, is the treatment par excellence where no abscesses are present.

4. When abscesses have formed radical operative interference must be immediately resorted to.

5. If the abscesses are extra-pelvic they

should be operated upon by direct incision and évidement.

6. When the abscesses are intra-pelvic the operator should approach the disease focus, supposedly in the anterior of the joint, by an opening made above the joint proper as described.

7. When both extra- and intra-pelvic abscesses are present the external abscess should be first opened, and the opening between the two, if possible, so enlarged as to admit of the radical treatment of the deeper focus of disease.

8. Radical operations cannot be made through long sinuses.

9. Drainage alone is not likely to be successful.

10. After-treatment should include besides antiseptis, continual rest, aided when necessary by the extension and pelvic belt.

11. When radical operation is undertaken no tubercular matter should be left behind.—*Annals of Surgery*, Feb., 1889.

**Benzoated Chloroform.**—DR. B. W. RICHARDSON recommends the use of benzoated chloroform as an antiseptic of considerable service in the treatment of foetid wounds. It is made by dissolving three drachms of pure benzoic acid in twelve ounces of chloroform and filtering if necessary. In a case of foetid ulcer of the lower extremities, after the bandage has been applied, he prescribes a fluid drachm of the solution poured over or near the ulcer, the deodorizing effect being of the best character. He states that the solution is also the most effective that he knows of for removing the foetor in troublesome cases of foetid exhalations of the feet. Used like eau de cologne, he finds it advantageous to rub over the hands at a post-mortem examination, and for similar purposes where a disinfectant is required.—*Asclepiad*, Vol. v., No. 19.

**Crude Sulpho-Carbolic Acid as a Means of Disinfection.**—E. LAPLACE (*Deutsche Med. Wochenschrift*, 1888, No. 7), following up

his experiments which resulted in considerably increasing the antiseptic power of sublimate by the addition of acids, sought to obtain similar effects in carbolic acid. Realizing that the comparatively insoluble 25 per cent. crude carbolic acid is not available for disinfectant purposes, he added to the latter equal parts of crude sulphuric acid, heating the mixture and allowing it to cool. The result is a thick, black fluid, very easily soluble in water, which possesses undoubted antiseptic powers.\* For instance, it destroys the spores of anthrax, in a 4 per cent. solution, in forty-eight hours; a 2 per cent. solution will accomplish the same result in seventy-two hours. This is about equivalent to the performances of a 2 per cent. solution of pure carbolic acid. It would seem, therefore, that the principal advantage of this compound resides in its comparative cheapness.

**Radical Cure of Hypertrophy of the Prostate.**—Simultaneously with Casper, Dr. Roux, of Lausanne, employed the galvanic current in the treatment of hypertrophy of the prostate. He has used the method in six cases and claims to have obtained even better results than Casper. His procedure is as follows: A broad electrode is applied to the abdomen. The other, which consists of long needles varnished to within 12 to 15 millimeters of the point, is introduced into the prostate through the rectum. At the beginning of the application a weak current is employed, but in one to three minutes this is gradually increased, until the desired maximum is reached. Roux uses currents up to 70 milliamperes, which are applied for 2½ to 5 minutes in this strength, and then gradually diminished, while the needles are withdrawn and inserted into another part of the prostate. No especial disinfection is required, since Roux regards the galvanic current itself as a sufficient disinfectant.—*Deutsche Medizinische Zeitung*, No. 97, 1888.

**Beta-Naphthol in Typhoid Fever.**—MR. J. MICHELL CLARKE, in an article on this subject, draws the following conclusions:

1. That the production of intestinal antiseptics is a rational mode of treatment of enteric fever, and that beta-naphthol is a safe and tolerably efficient agent for this end.

2. That the duration of the disease was shortened in the cases in which he used the drug, and the intensity of the symptoms directly arising from profound disturbance in the alimentary canal was lessened.

3. That the tendency to the occurrence of splenic enlargement, albuminuria, and of secondary complications, such as boils, abscesses, etc., of purulent infective origin, is diminished.

4. That complete convalescence is more speedily and satisfactorily attained, and that there is less risk of a propagation of the disease to others.

In some patients, however, naphthol may cause so much gastric disturbance as to prevent its use.—*The Practitioner*, December, 1888.

**Action of Inhalations of Ethylene Chloride on the Eye.**—M. PANAS, after a study of this subject, believes, contrary to the opinion of M. Raphael Dubois: 1. That the corneal trouble caused by inhalations of ethylene chloride are due to a serous infiltration of the corneal parenchyma. 2. That the mechanism of oedema of the corneal tissue depends on the destruction, by the ethylene chloride, of the corneal endothelium, which only protects the cornea against the invasion of the aqueous humor. Panas adds that he has never seen glaucoma after inhalations of chloride of ethylene.—*Progrès Médical*, No. 50, 1888.

**Treatment of Serpiginous Ulcers of the Cornea.**—In the treatment of serpiginous ulcers of the cornea, DR. DEHENNE advises the following course: (1) Open the lachrymal ducts and irrigate the passages with

an antiseptic solution (boric acid 4:100). (2) Wash out the conjunctival *cul-de-sac* with sublimate solution, 1:2000. (3) Cauterize the surface of the corneal ulcer by the aid of a fine pointed thermo-cautery at a white heat. (4) If there is pus in the anterior chamber, perforate the cornea with the same point and evacuate the pus. (5) Instil five or six drops of neutral sulphate of eserine solution (1:200) four times daily. —*Union Médicale*, January 1, 1889.

**Iso-Nitroso-Antipyrin.**—So much has been said lately about the toxic action of mixtures of antipyrin in sweet spirits of nitre, that two observers, Dr. H. C. Wood,<sup>1</sup> of Philadelphia, Pa., and Dr. G. Evans,<sup>1</sup> of Aberdeen, Miss., have made some experiments in this direction, and both claim that ordinary amounts of the mixture are perfectly harmless. The latter observer gave doses of the mixture to animals and man, and found the only effect was that of the antipyrin remaining unchanged. The former experimenter used the isolated product, the iso-nitroso-antipyrin, and found it inert. He says that a very small and harmless amount of cyanogen develops if the mixture stands for some time, particularly on addition of an acid.

**Cannabin in Graves' Disease.**—Valieri, after using cannabin in three cases of exophthalmic goitre, recommends the following formulas:—

Cannabin.....	gr. iv ss
Sugar of milk, q. s.....	Mix.
Make 5 pills.	
S. To be taken in 24 hours.	
Cannabin.....	gr. iv ss
Distilled water.....	iiij
Syrup of orange flowers.....	j
S. Take in teaspoonful doses in 24 hours.....	Mix.

Or we may prescribe a decoction of 2 or 4 100th parts, or doses of ℥ 15 or 30 of the tincture.—*Wiener med. Presse*, No. 41, 1888.

<sup>1</sup>Therapeutic Gazette, Feb. 15, 1889.

## EDITORIAL.

**THE TREATMENT OF DIABETES.**

One of the most notable and valuable papers that has been presented to the Chicago Medical Society for some time, was one on "The Treatment of Glycosuria," by DR. CHARLES W. PURDY. Beginning with the usual classification of diabetes under the two forms, of the milder manifestation of the disease, in which only small amounts of sugar appear in the urine, while the patient's health suffers little or no disturbance, and the more severe type, characterized by excessively saccharine urine, great thirst, polyuria, etc., leading more or less rapidly to extreme emaciation and death, Dr. Purdy goes on to point out some of the facts in regard to the glycogenic function of the liver, as taught by physiological chemistry.

The basis of the treatment of diabetes, in the opinion of Dr. Purdy, as well as of Dr. Pavy and other therapeutists, is diet. The foods that can be transformed into sugar must be prohibited. The hydrocarbons are of course the chief sugar-forming foods, and the more completely we can eliminate them from the food-supply in diabetes, the more completely will we be able to bring and hold the disease under control. First in importance is the question of bread. In regard to the so-called diabetic flours, breads, and cakes, Dr. Purdy does not hesitate to say that all these preparations now on the market are loaded with starch; are "a delusion and a snare." "Most samples of gluten flour," he says, "from which the starch is claimed to have been eliminated—or nearly so—contain from 20 to 40 per cent. of starch. I saw in Dr. Pavy's laboratory in London a few months since an analysis of one of the so-called diabetic flours on sale in our markets, which showed the starch contents to be nearly 60 per cent. Long before I became aware of these facts I found that I could not control typical cases of diabetes

if I permitted the use of commercial flours so-called 'diabetic.' I need scarcely add that with the above figures before me I have discarded them altogether.

"The withdrawal of bread from the diet usually constitutes the most serious deprivation the diabetic patient has to encounter, although the appetite for bread is more largely a matter of taste and habit than of necessity. Some patients become quite reconciled to the change after a few weeks, and do not mind it, but usually the craving for bread of some kind remains more or less strong, and will not be supplanted by the use of other foods. In the latter class of cases, if strict dieting be demanded, I permit the moderate use of bread made from almond flour as first practiced, I believe, by Dr. Pavy. The almond is absolutely free from starch, but contains about 6 per cent. of sugar. The latter may be eliminated by boiling the meal in acidulated water for an hour or so and then straining it. The almond meal is not on sale in the markets; the large percentage of its contained oil (50 per cent.) renders it unfit for keeping sufficiently long for commercial purposes. In my own practice I direct the meal to be made as required by means of mills especially constructed for the purpose. Almond flour, when beaten up with eggs, may be raised with the aid of a little baking powder, and baked in small tins in an oven, and the resulting bread is relished by most of my patients as equally palatable with ordinary bread. It should be borne in mind that almond bread, as indeed all substitutes for common bread, should be used in moderation; otherwise patients deprived of other luxuries of food fly to the permitted bread with an avidity seemingly born of the thought that it is indeed the 'staff of life' instead of merely a substitute therefor. To make a substituted article of diet go further than the original one is more than is to be expected, even in these practical days, and yet I am led to believe that the failure in

accomplishing this in the case of almond bread has led to its unjust condemnation by some in these cases."

Next in importance to the question of bread is that of the use of milk in diabetes. Dr. Purdy, after extensive trials of this article, has come to the conclusion that milk is successful chiefly, perhaps only, in milder forms of diabetes, of reflex origin. Such cases are controllable by moderate limitations of diet. In the more severe types of the disease Dr. Purdy has found that when the diet was rigidly restricted, save in the use of milk, the total exclusion of this article, without other change, caused a prompt reduction in the amount of sugar excreted, and often its total disappearance.

"Milk contains a very considerable amount of sugar (lactine), about half an ounce to each pint, and Dr. Pavy observes that this animal hydrocarbon 'comports itself in the intestinal canal precisely as does grape-sugar.' There can be little doubt, therefore, that in the more pronounced type of diabetes requiring a strict diet, milk should be excluded from the list. There is a form of glycosuria that occurs in obese and over-nourished subjects, in which the amount of sugar in the urine is usually small, and probably largely due to the ingestion of more hydrocarbons than the system is able to appropriate. Such cases are benefited, and indeed often cured, by a course of fasting. The 'milk cure' consisting of the exclusive use of skimmed milk is likely to benefit such cases because it is, in fact, a system of starving. Skimmed milk alone is not sufficient to long maintain proper nourishment to the system. In pronounced diabetes of central origin, where the assimilative powers of the system are weakened, and more or less emaciation has already set in, it would, therefore, seem absolute folly to confine the patient to skimmed milk, for under such circumstances death from inanition must be but a question of a short time. It is important to bear in mind that lactine is

confined to the whey, and consequently the other derivatives of milk—as cheese, cream, curds and butter—are unobjectionable."

After reviewing the food-products applicable in diabetes, Dr. Purdy gives the following *strict diabetic diet*, as appropriate in the more severe type of true diabetes of central origin:

"Meats of all kinds except livers; beef roasted, broiled, dried, smoked, cured, potted, or preserved in any way except with honey, sugar, or prohibited vegetables. Mutton, ham, tongue, bacon, sausages. Poultry and game of all kinds. Soups made from meats, without flour or prohibited vegetables. Eggs, butter, cheese, pure cream, curds, oil, gelatine and unsweetened jellies. Fish of all kinds except oysters and the inner parts of crabs and lobsters. Bread, biscuits, and cakes made from almond flour. Spinach, lettuce, olives, cucumbers, mushrooms, water-cresses, green cabbage. Almonds, walnuts, Brazil nuts, filberts, butternuts, cocoanuts. Salt, vinegar and pepper.

"*Drinks*, tea and coffee, mineral waters, whisky, gin and brandy, in moderation. Claret and Rhine wine.

"In mild forms of glycosuria some additions may be safely made to the above diet, and often with advantage. Since in such cases the sugar-forming powers of the organism are weaker; or, in other words, the assimilative powers for sugar and starch are greater, it is only necessary to limit, *not to curtail* the hydrocarbons. It seems necessary, therefore, to have at hand to draw upon a supplementary list of foods, which contain but limited amounts of these agents. The selection from the supplementary list should always be made with care; indeed, it should be almost as much a matter of experiment as rule, since we encounter wide differences in individual cases. Thus levulose—fruit sugar—is often well assimilated in the milder form of the disease, and this permits the inclu-

sion of certain fruits in the supplementary list."

Following is the *supplementary diet*: "Cabbage, celery, radishes, cauliflower, green string beans, coldslaw, kraut, young onions, tomatoes, cranberries, apples if not sweet, milk in moderate quantities, and bran bread or gluten bread well toasted."

Saccharine should be used as a sweetening agent; it is entirely harmless.

Scarcely less important than the diet itself is the method of dieting. When the patient is placed upon diet, medicines should be excluded until the sugar excretion is reduced as much as possible by diet alone. The more objectionable foods should be cut off step by step, until sugar ceases to appear in the urine, or until an almost or absolutely exclusive animal diet is reached. The method of dieting, and the various steps, given by Dr. Purdy cannot be even outlined in the space at our command; the subject is so important that his whole article, which appears in the *Journal of the American Medical Association* of March 30, should be carefully read.

In regard to drugs, it may be said that there is very little evidence in favor of any one being entitled to confidence; they are probably nearly inert, so far as their influence over diabetes is concerned, when their effects are carefully discriminated from those produced by dieting. The legitimate field of drugs in diabetes is practically narrowed down to the treatment of its accompanying symptoms, such as disordered digestion, constipation, nervous troubles, etc.

#### **WATER-SUPPLY AND STREAM-POLLUTION IN ILLINOIS.**

The Secretary of the Illinois State Board of Health has recently issued a preliminary report on the "Water Supplies of Illinois and the Pollution of its Streams." This investigation and study were among the earliest efforts of the State Board of Health, though they were at first necessarily con-

fined to pressing emergencies. Within the past twelve months the work has been pushed with great vigor and on a broad scale, the chemical work being done by Professor John H. Long, and the engineering work and estimates by Mr. L. E. Cooley, whose report on "The Illinois River Basin in Its Relation to Sanitary Engineering" is both interesting and exhaustive.

The work of the Board in this connection is by no means purely local, nor is it confined to the valley of the Illinois river; it covers already 3,500 miles of water-courses—all the streams in the State except the Rock river in the northern, and the tributaries of the Wabash and Ohio, and of the Mississippi below East St. Louis, as well as the water-supplies of all the State Institutions, and of the majority of the important cities and towns. The data secured embrace over 1,000 chemical analyses of various waters under different conditions, the meteorological conditions for a series of years, the physical conditions relating to questions of sanitary engineering, and other factors of the very complicated problem. No such work on so large a scale has been attempted before in this country.

Of the many important fields of work that must be covered by an efficient board of health, none is more important than those of water-supply and drainage. In this preliminary report are discussed the general physical characteristics of the Illinois and Lake Michigan basins, with the general effect of inhabitation, and a part of the principal tributary basins; also a partial report of the distribution and changes in population in the two basins. Great as is the amount of work shown in the report, still the report is but preliminary.

The effects of inhabitation have already been shown on many of the water-courses of the State, and it is certain that the next half-century will bring about the most radical alteration in the flow of the streams.

If left to themselves these streams will ultimately convert no inconsiderable part of the State into marshes. Some of the streams will run dry at certain seasons of the year, while at other seasons the floods will be increased. A considerable proportion of these effects will occur within a few years as the result of wholesale reclamation projects. They will be accompanied by an enormous increase in the amount of detritus, which will not keep up indefinitely in the future, but will be at all times multiplied over past conditions, owing to the increased tillage, and the more complete ditching of the lands. "The ultimate effect of the changed conditions in the lower valley of the Illinois will be to convert it into a continuous marsh, without well-defined drainage-lines other than a chain of sloughs, except, perhaps, at the lower end, gradually filling up its bottoms until in ages of time it may probably become adjusted to its new labors. It is doubtful if man can counteract these tendencies or more than postpone their consummation without a radical change in conditions." It must be the work of art to change these conditions.

The question of the dilution and disposal of Chicago sewage is one of great interest to a large portion of the State. More study will be required to determine with accuracy the limit necessary for the effective dilution of sewage, but from what is now known it may be safely said that the limit is within the practical means of accomplishment. This matter is intimately connected with that of distribution of population. The urban population of Chicago is about equal to that of the remainder of the State, double that on the Illinois river watershed, and many times that of the Illinois valley. These are facts of the greatest importance in considering the necessities of Chicago. And certainly, if the solution of the sanitary necessities of one of the largest and most important cities of the country can be made of benefit to

many other important communities, and of vast importance to the commercial, economic, and sanitary interests of a large portion of Illinois, there can be no question as to a wise State policy on the subject. And in this connection it may be remarked that it is an unfortunate characteristic of American legislative bodies to do things in too much haste, and without due consideration of the whole matter. Thus, plans are entered into, and hundreds of thousands of dollars spent in projects that have been tried and found to be failures in the old world. Hundreds of thousands of dollars, and a great deal of valuable time, could be saved by sending commissioners to Europe to study the sanitary methods and systems of such countries as England, Germany and France.

It is impossible in any ordinary amount of space to give even an analysis of the preliminary report, on account of its very condensed nature. We can say, however, that the work thus far completed is of paramount importance, and is a severe criticism of the recent action of the lower House of the Illinois Legislature in refusing to make appropriations for the State Board of Health. For the work that has been done great credit is due the Secretary of the Board, to Professor Long, and to Engineer Cooley. To complete this most important work the Board must have funds, and for the sake of the health of the people of the State it is to be hoped that the Board will not be hampered in this matter by unwise legislation.

#### **THIERSCH'S METHOD OF SKIN GRAFTING.**

E. PLESSING, of Leipzig, has contributed an interesting paper on this subject to the *Archiv für klinische Chirurgie*, Bd. 37, Hft. 1. Thiersch, it will be remembered, says that the healing of a granulating surface depends on two factors: *First*, in the changing of the soft, succulent blood-carrying granulation into the bloodless, dry, cicatricial papillæ, a result that causes a

diminution of the surface and the drawing together of the adjacent parts. *Secondly*, a covering over of the contracted papillæ with epidermic cells. These factors, the contraction of the wound and the growth of the pellicle, occur together, within certain limits; and when these limits are reached the granulating surface becomes stationary and inactive.

It is the upper stratum of granulation tissue that causes the shrinking after ordinary skin grafting, and also the insecurity of the result. Thiersch removes this upper layer, and Maas says that it is necessary both to freshen up at the edges of the ulcer, and especially to remove the upper layer thoroughly, and to expose completely the lower one with its horizontal capillaries; between this lower layer and the transplanted flap thorough adhesion will take place, never to be disturbed by cicatricial contraction.

The method followed in the Leipzig Clinic is thus described by Plessing: The part from which the skin is taken is completely disinfected; any disinfectant may be used, but during the course of the operation a 6 to 1000 sterilized salt solution is used. All the soft granulations are then scraped away from the granulating wounds with a sharp spoon, the bleeding surface irrigated with the salt solution, sponged, covered with protective and compressed for five or ten minutes until bleeding ceases. The best results are obtained when the granulations are about six weeks old, and after their growth has been limited by repeated cauterizing and compression.

The wound being thoroughly prepared, the skin-grafting is begun. The skin of the arm and thigh is most often used. The skin must be free from fat, and well stretched by the left hand, the right hand carrying a razor with a long, wide, concave blade, held flat, and drawn slowly with a sawing motion through the upper layers of the skin; all this time the blade must be kept moist with the salt solution. The

grafts are transferred immediately from the knife to the prepared surface; the blade is laid on the wound, and the edge of the graft is drawn over on to the wound by means of a probe; as the blade is withdrawn the graft easily slips into place. Any wrong position of the graft may be corrected by means of the probe or a small brush. When necessary the flap may be shortened. The whole area of the wound must be covered with strips of skin, which should overlay the edges of the wound, and come together as close as possible, even to the extent of slightly overlapping one another. The skin is now gently pressed in place with a spatula.

The dressing should protect the grafts, and maintain them in position. Better results are obtained by using a moist dressing, changed daily. The vicinity of the wound is smeared with oil to prevent the dressing sticking. The grafts are covered with a strip of protective, soaked in salt solution. Over this is placed a pad of cotton, moistened with salt water; this is covered by a large piece of protective. Over this is another pad, of dry cotton, and the whole is held in place by a cotton bandage, over which a dextrine bandage is applied to prevent slipping. If a dry dressing is to be used, an iodoform dressing is the best. The places from which the skin has been removed are covered with iodoform dust, a dry dressing is applied, and left for a week or two.

Within the first few days the grafts may undergo the following changes: If they are of a pinkish color success is tolerably sure. If they are white they will drop off in a few days. Blood under a graft gives it a bluish color, and endangers the healing process, but does not always lead to suppuration. In order to prevent the entrance of bacteria into the wound, which prevent healing, the dressing should be changed every day during the first week, and the surface irrigated with sterilized salt water.

When the wounded surface is not cov-

ered with grafts a fibrinous exudation appears on the free borders, and the grafts begin to separate. The healed grafts become detached, or small epidermal blisters filled with pus appear on the healed spots, and form ulcers that gradually enlarge. The superimposed skin may be broken through from below by granulations, and disappears, temporarily at least, but when the granulations recede later, epidermal islets are again seen. Syphilis may prevent the healing of the grafts.

Plessing gives a series of 40 cases in which transplantation was done 78 times; 17 times on fresh surfaces, and 61 times on scraped granulating surfaces. In 58 cases there was perfect healing, in 12 cases it was incomplete, and in 8 it was a total failure, and the grafting was repeated. The results are better on scraped granulation surfaces than on loose or connective tissue (fascia, periosteum); glandular and muscular tissues give good results. Spongy bone tissue and exposed tendons do not give permanent results. Grafts do not adhere to compact bone.

Plessing lays stress on the following points: Careful disinfection of the hands and instruments, newly prepared sterilized 6 to 1000 salt solution, proper time of operation, thorough hæmostasis, complete covering of the wound with grafts, immobilization of the part, careful bandaging, and daily changes of dressing, with thorough irrigation.

#### THE EFFECTS OF TIGHT-LACING.

DR. BORIS I KIANOVSKY records, in some recent numbers of *Vratch*, a series of experiments that he has carried out with the view of determining the effect of tight-lacing on vital capacity, the movements of the thorax, the energy of inspiration and expiration, arterial tension, pulse, and respiration. The experiments were conducted on thirty female patients between the ages of 18 and 44 years, twenty-eight of whom

were tight-lacers. His results may be summarized as follows:

1. The corset lessens the respiratory movement of the thorax, and diminishes both the vital capacity and the force of the inspirations and expirations, the inspiratory movements being particularly affected.

2. Since the corset compresses the thorax and diminishes the amount of the inspired air, it necessarily gives rise to chronic "oxygen starvation," which is one of the chief causes of dyspnoea and cardiac palpitation during brisk walking (fatigue being noticed early on physical or mental exertion), anorexia, faintness, vertigo, and other like symptoms usually noticed by tight-lacers.

3. A tight corset causes a fall of arterial tension, which in tight-lacers is usually below the normal (consequent upon arterial anæmia).

4. The effect of the corset on the frequency of the pulse was shown by the following experiment: The women were made to run 980 feet, with moderate swiftness, without corsets or lacing. The pulse was 136, 140, and 156, and the respiration 32 a minute. When the same women ran the distance tight-laced the pulse was 144, 160, and 176, and the respiration 48, 60, and 64.

Among thirty-eight corset-wearers, movable kidney was found in eight, habitual constipation or gastro-intestinal catarrh in fourteen, disease of the apex of the lungs in six, anæmia in five, hysteria in five.

The author says in conclusion: "I cannot help saying that I look upon the work of my predecessors and upon my own humble contribution with a sense of bitter and painful regret, for I am conscious that all the labor directed towards showing the evil effects of tight-lacing must yet remain unnoticed, or neglected, by women for a very long time." Nevertheless, such work is in the direction of desired dress reform, and if persisted in must in time produce some result.

## SOCIETY REPORTS.

## ALLEGHENY COUNTY MEDICAL SOCIETY.

*Special Meeting, February 19th, 1889.*

W. F. KNOX, M.D., PRESIDENT,  
IN THE CHAIR.

DR. LINCOLN reported a case of  
FEVER FOLLOWING CONFINEMENT.

Upon the ninth day, after a tedious but otherwise normal, instrumental delivery, resulting in a slight perineal laceration, I was called to see the patient, a slight woman, and found her with a temperature of 103.8°, and back and hip ache. Pain and temperature elevation disappeared during the following three days, but both with a pulse of 140 returned on the sixth day. The fever now assumed an irregularly intermittent type, and now, 20 days from its beginning, convalescence is present. The labor was conducted with antiseptic precautions. Her treatment was intra-uterine bichloride injections, quinine and morphine for pain and sleep.

DR. SAMUEL AYRES read a paper on  
PARACENTESIS IN INTERNAL HYDROCEPHALUS.

The history of the boy, who is present this evening, is as follows: His age is nearly five years, his height is 3 feet 1½ inches, and weight 43 pounds. There seems to be no history of the neuroses in his family. His father's mother died of cancer of the breast, and an aunt of his mother of phthisis. His mother and father have always enjoyed the best of health, the latter being a laborer. He denies any venereal infection.

The mother states that her boy was perfectly healthy and normally developed up to three months of age, when, without known cause, he was suddenly seized with convulsions during sleep. These attacks became very frequent, occasionally from twenty to thirty occurring daily, and they continued for nine months, or until he was one year old. They then ceased, and have not recurred. Three months after their com-

mencement his head had naturally enlarged and assumed a pear shape, the greater diameters corresponding with the biparietal parieto-occipital planes. There was no separation of the cranial bones. From the date of the beginning of his trouble up to the time that he was brought to my clinic, in October, 1888, every form of treatment had been faithfully tried, according to his parents, but without the least success. At that time his condition was this: Mentally, there had been little or no development. He was obviously imbecile. He could not talk, but smiled idiotically. He was totally blind, but the other special senses were not apparently affected. He had never walked or stood alone, but could easily move his body and extremities. The bowel and bladder sphincters were not controlled. He was extremely irritable and restless, and slept very irregularly. He would take only liquid food given from a spoon. He was fairly developed physically and quite well nourished, but always of an ashy pallor. There was a very frequent rotary movement of the head, with slight retraction, and grinding of the teeth. His pulse was from 120 to 140 per minute. Temperature was not taken. The measurements of the head were the following: From the gabella toinion, 12½ inches; over the bi-auricular line, 13¾ inches; around the fronto-occipital line, 20 inches. The anterior fontanelle closed when he was eighteen months old, and the sutures had ossified at the usual time. No abnormal sensory symptoms were noticed. We could not succeed in making an examination of the eyes owing to his restless state.

A diagnosis of ventricular effusion was ventured. His parents suggested and urged some kind of an operation as a *dernier ressort*, as they fancied something might be done surgically. To this I very reluctantly consented, having distinctly pointed out the dangers and uncertainties incident to such procedure.

On the 4th of December, 1888, assisted

by Drs. Murdoch, Hersman and Boreland, and in the presence of the students of the Western Pennsylvania Medical College, the following course was pursued: The head having been shaved, washed with strong soap, and enveloped in carbolized cotton for twenty-four hours, the boy was chloroformed. Over the coronal suture, about one and one-half inches to the right of the median line, a small flap of the scalp and pericranium was reflected. With a trephine about one cm. in diameter, I removed a button of bone, which was slightly thicker than normal. The dura looked healthy, but owing to its small exposure the tension could not well be estimated. It distinctly pulsated. A very delicate trocar was passed through the dural membrane into the brain substance, downwards, backwards and inwards, to the depth of two and one-half inches, the object being to pierce the central cavity of the right lateral ventricle.

There were no reflex movements of any kind observed during this procedure. The trocar being removed, a clear, limpid fluid began to ooze, drop by drop, from the canula. About an ounce of this was evacuated, when the canula was slowly withdrawn. As its internal orifice reached the sub-dural space, the same transparent fluid dropped from the opposite end, thus revealing the presence of perhaps an excess of fluid in this space also.

Its specific gravity was not obtained, but it was faintly alkaline, non-albuminous, contained chlorides in abundance, and also phosphates. Evidently it closely resembled the cerebro-spinal fluid.

The pericranium and scalp were approximated and stitched, and the wound dressed with carbolized gauze. For several days the same fluid continued to ooze from the puncture in the dura, and to saturate the dressings. It was estimated that from four to eight ounces was thus discharged.

The case progressed satisfactorily, the pulse not exceeding 140, nor the temperature rising above  $101\frac{8}{10}^{\circ}$ . The child

seemed anxious to be up in two or three days, and could then stand alone. The results of the operation were quickly observed in a partial restoration of sight. The boy could evidently see, as he would wink when a finger was passed before his eyes. Then, having stood unassisted, he was gradually able to walk alone across the room, which he did in about three weeks. He became less irritable, and instead of short snatches of sleep, as before, slept the entire night. He also took some solid food, which he had not done previously. For three weeks following the tapping he did not rotate the head a single time.

The mother states that, in a great many respects, the child is improved. He is more attentive, and seems to better understand her. There is, however, no development of speech, nor are the sphincters under any better control.

He continued in this improved state till the latter part of January last, when, after some slight ailment, he gradually lost the power to walk. Thinking that the fluid was reaccumulating, we proposed tapping him again on the 8th of February, but on the 5th he commenced to walk again, so it was postponed.

It is my opinion that more fluid will have to be evacuated, as he is not quite so active now as some time after the tapping. I am fortunate in being able to report an ophthalmoscopic examination of his eyes, which was very kindly made to-day by Dr. Lippincott, while the boy was anesthetized for the purpose.

"Right eye. Disc snow white, and with sharply defined margins. Capillary circulation greatly diminished. Retinal vessels, especially veins, reduced in calibre. Arteries not very much below normal size. Retina also atrophic. Media clear.

"Left eye. Same condition as right, except that the disc margins are even more sharply defined and a small quantity of pigment is seen surrounding the disc.

"Divergent strabismus of O. S. Pupils normally react."

The most practical bearing this operation would seem to have is in reference to those imbecile children, the commencement of whose trouble dates back to some acute or subacute cerebral affection, as simple meningitis or convulsions, or perhaps slight traumatism, but whose cases have always been considered irremediable. It seems probable that many such cases go to fill the institutions for feeble-minded throughout our land, or else prove, in their own homes, a grave care and an eternal responsibility to parents. And the question may be pertinently asked whether an excessive or a pathological effusion within the cerebral ventricles or sub-dural space, or within both, may not only have caused, but perpetuated, these undeveloped brains and minds.

The presence of such excess of fluid is abundantly adequate to produce the symptoms by pressure upon the delicate nerve elements or tracts, and the varying character of the attacks, as in this case, would strengthen the probability that a fluid, changing with the body position or blood-pressure, was the responsible agent in their production. Or, during the sub-acute stage, when convulsions, coma, paralysis, or other grave symptoms follow an obscure brain attack, consisting, perhaps, in ventricular inflammation, and when death is imminent, it seems to me not only justifiable but imperative, that the sub-dural space be tapped, and if the symptoms do not soon abate, that the lateral ventricles be penetrated. If the product of such inflammation should prove to be purulent, which is not probable, the opening in either case would have to be enlarged and thorough drainage, with antiseptic irrigation, established.

But since most of these sub-acute cases of sub-dural or ventricular meningitis are attended only with fluid effusion, the operation would be comparatively easy, particularly if the fontanelles had not ossified. I

shall never again stand by, even after exhausting all other resources, and allow convulsions or coma or paralyzed respiratory centers to carry off an infant, with all the symptoms of ventricular effusion, without resorting to paracentesis, unless a tuberculous history makes certain its fate.

In the performance of the operation great care should be exercised. The chief difficulty lies in our inability to determine which cavity to evacuate. For instance, if the fluid resides in both cavities, and the normal openings between them, through the foramen of Majendie, and those behind the roots of the glosso-pharyngeal nerves be closed by inflammatory exudation, or the presence of a tumor, then to tap only the sub-dural space would remove the external pressure, and allow such an expansion of the internal fluid as would perhaps lacerate the brain tissue. Or the same effect might be produced by evacuating only the ventricular fluid. This may have been the cause of death in some of the reported cases.

It would seem, therefore, that the safest course to pursue would be that followed in the above, particularly when the cranial sutures are closed—to tap first the ventricles and then the external space.

The operation of tapping for hydrocephalus is not new. It is thought Le Cat first performed it in 1744. West (3d Am. Ed., p. 117) refers to the operation, but states that opinion is divided as to the propriety of the practice. He had up to that time collected 56 reported cases from different sources, with 4 recoveries, but he does not state whether they are of the external or internal form; though the inference is that they were of the former, since compression after operation is referred to.

Watson (p. 291 *et seq.*) gives several cases of the external form, for which tapping was practiced, with variable results, some dying, some recovering, but he speaks of no cures.

Ellis (3d Ed., p. 83) says that punctur-

ing is not applicable to the ventricular form, and he rather discourages its employment in the external. He quotes Churchill, who gives a list of unsuccessful cases. But Ellis admits that the operation has been occasionally successful.

In the *Cyclopædia of Practical Medicine* (vol. II, p. 500) Folis is quoted as giving the names of 27 writers who had expressed themselves in favor of the operation. Yet he himself with Boerhaave, Dupuytren, Heister, Hecker and Portenschlag, regarded it as cruel and useless.

George B. Wood (2d Ed., vol. II, p. 353) says that tapping has been employed by many with uncertain results.

Elliotson (2d Ed., p. 511) states that he never saw a case of the kind, but that if a minute puncture be made and a small quantity of fluid be evacuated at a time, it might be done with safety and with prospects of relief.

Reynolds (*System of Med.*, vol. I, p. 840) quotes Watson, West and Conquest on the subject, the last of whom he states has been the greatest advocate of the operation in this country (England).

Condie (2d Ed., p. 400) refers directly to the tapping of the ventricles and points out with remarkable accuracy the procedure. At the same time he admits that he had never seen a case.

Trousseau (*Clinical Med.*, vol. I, p. 890) remarks that the brain has been tapped through the sutures and fontanelles for hydrocephalic accumulation, but he does not seem to think its advantages counterbalance its disadvantages.

Henoch (*Handbook for Phys. & Student*, p. 116, Wm. Wood & Co., 1882) says of chronic internal hydrocephalus: "At least I have achieved no results whatever, either with mercurial inunction, iodide of potassium or applications of tincture of iodine to the head. Nor can I promise any results from compression of the skull with strips of adhesive plaster, or from puncture through the fontanelles."

Gross (5th Ed., vol. II, p. 123) has practiced paracentesis in two cases, both dying within two days after the operation.

Agnew (vol. II, p. 886) speaks of the benefits of the operation as claimed by West and Conquest, but declares such results have never been obtained in this country. He describes only the tapping of external hydrocephalus when the sutures or fontanelles are not closed.

Meigs and Pepper (7th Ed., 1882, p. 557) refer to West's cases and give one of internal hydrocephalus, upon which they operated, death following in less than forty-eight hours. Examination, however, proved that the case was hopeless, the brain being disorganized at the base, and the child, less than three years old, the victim of miliary tuberculosis.

J. Lewis Smith (6th Ed., pp. 448 and 449) advises the performance of the operation, and regards it as simple and devoid of danger, but his remarks apply only to the congenital form, and evidently to those with opened sutures and fontanelles. He makes no reference to tapping in acquired hydrocephalus.

Gowers (*A Manual of Diseases of the Nervous System*, vol. II, 1888, p. 544) considers evacuation by puncture the most direct, but unfortunately the most dangerous, treatment, and advises that but a small quantity be let out each time, and compression of the skull by elastic bandages be kept up. This procedure, he says, is of course most suitable in external effusion, but it has been employed in the ventricular also, occasionally without ill effect, but with absolute success only in rare instances.

An operation in a different kind of case altogether, but with very similar technique, excepting that in this the dura was incised, is referred to by Senn,\* an imperfect account of which is obtained from the *Mel-*

\* Annual of the Universal Medical Sciences, Vol. II, page 36.

*bourne Age*, a non-professional Australian journal.

This operation was done for an echinococcus cyst in the brain on January 27, 1888. The patient, a girl of sixteen, was chloroformed. A button of bone one inch in diameter was removed from the left temple, the dura incised, and a trocar inserted through the substance of the brain, and the cyst successfully penetrated, a large quantity of fluid coming away.

Thus it will be seen that a diversity of opinion is expressed by authors as to the propriety of paracentesis capitis. But in the light of modern antisepsis, and of a more intimate knowledge of the brain anatomically and physiologically, it would seem that this operation must take its legitimate place among those which were once conceived to be both impracticable and impossible.

I can find reference to no other case similar to the one above reported, in which tapping was practiced for both ventricular and sub-dural effusion of the primary or acquired character, the sutures and fontanelles being closed, and trephining being required to permit of the entrance of the trocar.

DR. MURDOCH: I saw Dr. Ayres' patient, and assisted him at the operation. I saw the child but once—at that time. He is certainly improved physically; from my slight acquaintance with his peculiarities, I venture the opinion that he is much more animated and gives greater evidence of physical skill.

DR. THOMAS: I know of a case of congenital hydrocephalus, which was tapped and then strapped. Strapping resulted in convulsions and had to be abandoned. It is a question where—as in Dr. Ayres' case—the equilibrium between epithelial secretion and absorption is destroyed, whether any permanent result is attained by evacuation without the destruction of the epithelial lining of such cavities. I am on the negative side of the question. In my

opinion the fluid will be reproduced and with this will come the symptoms present before the evacuation.

DR. LIPPINCOTT: The restoration of sight so speedily after Dr. Ayres' operation is quite interesting. It was undoubtedly due to relief of pressure in the sub-dural space, Dr. Thomas' remarks remind me of the pathological analogy between Dr. Ayres' case and glaucoma. There we have the same sort of disturbance of the equilibrium between secretion and absorption. No amount and frequency of tapping has ever resulted in anything but temporary good. More than tapping must be done to accomplish a cure. It requires removal of a portion of the iris.

DR. LANGE: Exudations and transudations, inflammatory products and dropsical effusions are produced by congestions, active or passive; if epithelial activity was concerned in the production of the fluid in Dr. Ayres' case, as is assumed by Dr. Thomas, why need this factor alone be made responsible for the effusion? It is well established that large pleuritic effusions, not purulent, are frequently absorbed after removal of a sufficient quantity to abolish pressure. It is the pressure which constitutes the obstacle to absorption in such cases, and its removal restores to the absorbents their function. This restoration of a pleural cavity has been observed with sufficient frequency to warrant the belief that without the trocar, absorption would not have happened.

DR. MCCANN: I am of opinion that Dr. Ayres' case was one of deep local abscess of the brain. There was very marked paralysis. A recurrence of the symptoms removed by the operation also points to this. The history of brain abscess is that symptoms repeat themselves with frequency, continuing for months and months, and resulting in imbecility. I would ask Dr. Ayres why he selected the point upon the skull which he did for perforation of the skull. It is not a point favorable to

free drainage. Dr. Ayres' trephine, also, was very small. In removing tumors the bone section should be large. The benefit received by the doctor's patient was due, in my opinion, not to the fluid which was removed, but to the evacuation of an abscess. The drainage employed was certainly beneficial; the question is, should not a drainage tube have been inserted? The case is an additional argument in favor of brain surgery.

DR. STEWART: There is a point in the etiology of internal hydrocephalus which has not been mentioned, namely, an obstruction to the communication of the ventricular cavities with the sub-arachnoid spaces of the brain and spinal cord, such as may occur at the aqueduct of Sylvius, which is naturally very narrow, or from closure of the foramen of Majendie. This, it seems to me, would explain some of the points of the case, namely, the gradual reaccumulation of the fluid and the small amount of fluid removed by the canula. A considerable amount of fluid exists in the sub-arachnoid spaces of the brain and spinal cord, and had there been a communication between the sub-arachnoid space and the ventricles, it is but natural to infer that there would have been a considerable amount of fluid withdrawn from this space instead of but little, as in this case, where only six drachms was removed. As regards the method of opening the ventricular cavity, Langenbeck has operated by thrusting a canula through the orbital plate of the frontal bone. This method, it seems to me, would obviate the objections of Dr. McCann regarding the manner of draining the cavity.

DR. AYRES: In reply to Dr. McCann, I wish to say that I cannot call the case one of abscess. The fluid evacuated was clear and watery, and though we did not examine it under the microscope, we did make a chemical examination of it and found it contained no albumen. The specific gravity was not taken, as not enough fluid had

been removed. But I never thought of an abscess, because it seemed perfectly clear to me that the case was one of pressure on the brain from accumulation of fluid. I made the small opening merely because I knew it would not require a large opening. We selected that point because it was the one most spoken of by authorities. As I said, I could find no regular cases of trephining. I thought it a safe point, and as the result proved, it was safe.

DR. HERSMAN: It is considered unsafe to draw off more than two ounces of fluid. In Dr. Ayres' case we removed an ounce and the drainage evacuated considerable more. As to the point of operation, it was fixed by the experience of prior operators, and the result proves that no injury was done by it. The subsequent drainage evacuated probably six ounces, perhaps more. The quantity of fluid in the patient's head was certainly more than is normal. The restoration of the sight—absent before the operation—is conclusive evidence that this absence was caused by pressure, i. e., by a greater than normal amount of fluid in the head.

DR. HITZROT reported a case of

#### CYANOSIS AND DEATH OF INFANT.

Was called January 2d to a woman said to be in labor. She had 3 living children and had had two miscarriages. Her former labors had been normal. Her family history was excellent. No syphilis nor epilepsy on her nor on her husband's side. I found that she was not in labor, but was suffering with painful convulsive contractions of the muscular system of the whole body, with entire absence of uterine contractions. These pains recurred every 20 or 30 minutes. I considered them epileptic and gave her full doses of the bromides, which controlled them while she remained under the influence of the drug. On January 22d, upon which day she had a series of attacks, she was delivered, after a normal labor, of an eight-pound male infant. She had a few attacks during three following days,

after which they recurred no more. She made a good recovery. The infant was of a natural color when born, but rapidly this became cyanotic, and then decidedly blue. He had a peculiar, plaintive whine which was constant. There was a slight bulbous enlargement of the finger ends. The infant lived seven hours, took a little sweetened water, but passed neither *fæces* nor urine. A post-mortem examination was not had. Whether the cyanosis was due to pulmonary stenosis, or to perviousness of the foramen ovale, is immaterial; the interest in the case centres upon the connection, if any, between the epileptiform convulsions of the mother and the anatomical cause of the cyanosis of the infant.

SIX MONTHS' FETUS BORN WITH UNRUPTURED MEMBRANES.

DR. BATTEN reported a case, where, after prolonged moderate hæmorrhages, a six months' fetus was born, encased in the membranes. These were at once ruptured, but the child was dead.

PASSIVE MOTION IN FRACTURES ABOUT JOINTS.

DR. LANGE: I desire to report two cases of fracture of the astragalus, first, because fracture of this bone is not a common one, but more particularly, as illustrating the good effects of immobilization. The first case happened in a young man, in consequence of a ten-foot perpendicular jump. This patient walked a distance of three blocks after the accident. He denied the existence of a fracture. He treated himself with liniment and lotions. His ankle-joint was not put at rest. The other patient, a man of 37, fell from an elevator, a distance of 30 feet, striking upon his right foot. His ankle joint was put into plaster under extension. The plaster was removed in four weeks, and three months after the accident his ankle was strong, useful, painless, mobile, and without visible deformity. The first case, now nearly two years old, presents considerable stiffness and enlargement of the joint, with pain on motion. It

resulted in a painful and enlarged joint. The very great difference in the result of these two cases is to be ascribed to the difference of treatment, and illustrates the beneficial effect of immobility in this fracture.

Two years ago I dressed an arm for fracture of the internal epicondyle of the humerus, which happened a young lady by a fall from her horse. The dressing, although frequently removed, was worn for four weeks. After this time passive motion was employed, and the result was, and still is, that the arm cannot be entirely extended. There is deformity. The arm cannot be made quite straight, and there is thickening of the condyle. When I reported this case to the Society, the opinion was pronounced that immobilization of the joint had been too long continued, that if passive motion had been instituted earlier, deformity might have been avoided. This opinion was not unanimous, however; it was also held that four weeks' quiet of the joint was the best treatment for the fracture.

Finally, two cases of Colles' fracture have been for me very instructive, as examples of the result of early passive motion. In one of these cases I removed the splints on the tenth day, in the other on the fourteenth day. Passive motion was not, however, immediately employed. The wrists were simply released, and patients instructed to move the fingers. When the splints were removed the swelling had disappeared, and the temperature of the arms was no longer elevated. But swelling and temperature elevation returned because of removal of the splints so early, because of the lack of immobilization. Motion so early is a most powerful irritant. And irritation, evidenced by swelling and temperature elevation, is synonymous with additional deposits about, between and upon muscular sheaths and tendons which later become organized, and prohibit normal movement. Of all Colles' fractures I

have treated, these two, as far as usefulness of the hand is concerned, are the worst. This is not true of the characteristic deformity—the prominence of the ulna, which results more from the nature and complexity of the fracture than from its treatment, but it is true of the fibro-cellular ankylosis, which determines the amount of permanent damage to finger and wrist movement. I have no doubt the early removal of the splints alone is responsible for the result in these cases.

DR. BATTEN: In my opinion, a patient with Colles' fracture will get along better without splints than with them. I have removed the splints in two weeks, and made passive motion. I have always removed the splints in three weeks. I have dressed this fracture simply with adhesive strips, and had a better result than with splints. Fingers, wrist, elbow and shoulder, all grow stiff with splints.

DR. KEARNS: Many years ago I treated a case of Colles' fracture with a straight splint with an elegant result. For many years now I treat all Colles' fractures, all fractures of the radius and of the fore-arm, with my flexed splint. My splint carries out the most important principle of the treatment of fractures at the wrist, namely, complete relaxation of all the muscles of the hand and fore-arm. My splint retroflexes the hand, relaxing all the muscles on the dorsum of the arm and flexes the fingers, relaxing all the flexors on the opposite aspect of the arm. This is the principle of the splint, perfect muscular relaxation as well as fixation of the bones.

DR. MURDOCH: The cases of fracture in the vicinity of joints, related by Dr. Lange, well illustrate the advantages of rest, and the immobilization of the fractured bones until union has taken place. They also show the evils which may result from a too early resort to passive motion. I fully agree with Dr. Lange in what he has said. This is a very interesting question, namely: When should passive motion be commenced

after fracture near a joint? Prof. Hamilton and other eminent authors have said that in treating fractures in the vicinity of the elbow-joint, that passive motion should be commenced after a week or ten days from the receipt of the fracture; and he also says that in many cases these fractures could be best treated without any splint at all. It was my custom in the first years of my practice to follow this teaching. And in following it, and in seeing it practiced by others, I have seen joints becoming stiffer and stiffer until complete ankylosis of the joint has occurred. More extended experience has fully convinced me that the practice is altogether wrong. It is contrary to the first principles by which all injured parts should be treated. Rest of any part of the body which has met with a severe injury is the first principle of treatment. This is especially true of fractures. The fracture should be *first* reduced, and, *second*, should be retained in position. And no motion of any joint should be permitted which might displace the fragments. The immobilization should be maintained until union between the fragments has taken place, which can only occur after three or four weeks. Then passive motion of the very gentlest kind, and motion which does not cause any pain, may be permitted. A departure from this practice can only result in displacing the fragments, cause inflammation in the sheaths of the tendons, favor an effusion of lymph, a too abundant callus, and ankylosis of the joint.

DR. McCANN: Dr. Murdoch has voiced my opinion regarding rest and passive motion in fractures about joints. Stiffness from fractures about the elbow joint occurs not from want of passive motion, but because in young persons small bone fragments unite wherever they may happen to be placed by the violence of the fracture. Then it may happen that new bone, bone uniting the fragment to the shaft, will be formed and forever impair the usefulness of the joint, particularly the elbow joint.

This happens no matter what kind of splint may have been used, straight, flexed, or simply a sling. You will occasionally get a bad result in spite of all or any splint you may use, in spite of passive motion. I believe, however, that all fractures should be kept at rest until union has been accomplished. After this adhesions may be broken up by gentle passive motion. The only other thing I wish to say is that I hope the Society will not endorse the principle that Colles' fractures should ever be treated without a splint. It would under no circumstances be safe to state to a jury that no splint had been used in the treatment.

DR. THOMAS: I believe fractures should be kept at complete rest until united. Colles' fracture can be well and properly treated with almost any splint. The multiplicity of splints for this fracture proves it. The final result will depend upon the amount of injury, besides that done the radius, which the accident has inflicted. If the bone only is broken the result will be good. If, in addition, the ulna is dislocated, then it will be less good; and other additional injuries will have their weight in determining the final result.

DR. LANGE: I am sorry I failed to emphasize the point I wished to bring up for discussion. It was whether passive motion should be made after a week or two. Those gentleman who have spoken this evening have decided with me. I think it bad practice to make passive motion early in the treatment of fracture about joints.

DR. BUCHANAN: It has occurred to me that the value of special splints and other apparatus used to maintain apposition of broken fragments of bone is often overrated. I am reminded of a case of fracture of the clavicle, in which the patient removed the dressings in a few days, despite the warnings of a possible deformity, and returned to his work. He had, however, good apposition, good union and no excess of callus. This and other similar cases have made me

somewhat skeptical of the absolute necessity or even the advisability of many of the immovable dressings now in use. Rest of the bone is unquestionably the great desideratum, but the value of much of the cumbersome apparatus used might be questioned. In this connection I would remark, since the treatment of Colles' fracture without a splint, after the method of Dr. Moore, of Rochester, has been mentioned, that if this is a good method of treatment, it should be adopted irrespective of the legal responsibility involved.

DR. MURDOCH, in commenting upon the case related by Dr. Buchanan, said, that fractures will unite even when a good deal of motion is permitted between the fragments, and even when the fragments are somewhat asunder is well known. It is well known that the fractures which the lower animals receive in their combats with each other, and as the result of falls, readily unite, notwithstanding that they are not accurately adjusted, or maintained in position. So also in man, in bones which it is impossible to keep at rest (as the ribs) do they unite. But the union which is effected in these cases is by a very abundant supply of callus. In these cases there is always a great amount of provisional callus, a large ensheathing callus.

In the case of a fractured clavicle, when the fragments have not been accurately held in position, the only evils which result are the deformity and the greater length of time for union. The manner in which fractures unite, where the adjustment is accurate and the immobilization perfect, is entirely different. It is probable that in these rare cases union will take place as it does in the soft parts, namely, by first intention. In these cases there is no provisional callus. Where provisional callus exists motion between the fragments has been permitted, and the amount of callus will be in direct proportion to the amount of separation and motion.

From what has been said it is evident

that, although accurate adjustment and motion between the fragments will not always prevent the union of bones, it will always delay the union, and result in some deformity of the bone. The resultant deformity may not be a matter of great moment in some bones and in some situations, but when it occurs in, or near a joint, it is likely to seriously interfere with the motion of the joint and may produce bony ankylosis. It is for these reasons that in all cases (and especially in the treatment of fractures in the vicinity of joints), that the adjustment should be as perfect as possible and no motion permitted until there is some union between the fragments.

#### CHICAGO MEDICAL SOCIETY.

*Stated Meeting, January 21.*

THE PRESIDENT IN THE CHAIR.

DR. CHAS. WARRINGTON EARLE read a paper entitled:

THE CONTAGIOUSNESS OF DIPHTHERIA, AND ITS MUNICIPAL CONTROL.

With us there has arisen the question sometimes whether a given case was diphtheria—follicular tonsilitis—tonsilitis without deposit, or simple ulcerative stomatitis. We have sometimes criticised physicians who have called a pharyngitis with a few white spots, diphtheria. In view, however, of the fact that some of these very mild cases have proven markedly contagious, it is a question with me as to whether physicians who call and treat a mild case as diphtheria, have not in the main been correct. My conversion to this procedure was brought about as follows: In 1878, I was attending a family consisting of four girls and one boy. The female children had sore throats, characterized by redness, some pain and a few white spots. It was diagnosed as follicular tonsilitis, and the parents were informed that there was absolutely no danger. In the course of a few days the boy was taken with the same symptoms, which rapidly became more

alarming. General infection in the course of two days took place, and death resulted. I have always thought that if I had diagnosed diphtheria in the first patients, treated it as such and sent the boy away from the infected locality, he might be alive to-day. This, with other cases, has changed my diagnosis and practice entirely.

About six years ago I was treating a case. It was a mild one, and recovered rapidly. During the course of treatment a relative of the family, with two children, was journeying from the east to their new home in Dakota, and stopped for twelve hours in this infected house. Neither the mother or children were in the room with the mild case I was treating—indeed, not on the same floor of the house. They remained a single night in a remote part of the house, and in the morning resumed their journey. In one week after arriving in Dakota, one of the children sickened and died; in another week the remaining child died, and the mother barely escaped death from the same disease.

Although the contagiousness of this disease has been recognized for two hundred and fifty years, we at this day find members of our profession denying it, and refusing the greatest safeguard to not only their own families, but to the public at large, in casting their influence against isolation and other means to prevent the spread of the disease. The authorities, almost without exception, are a unit in regard to its contagiousness.

In this connection there are many questions which might with profit be discussed, such as the time of incubation, the identity or non-identity of croup and diphtheria. But its contagiousness, in my judgment, is of the greatest importance. One would think, from our discussions, that the chief aim of the practitioner of to-day was to tube or perform tracheotomy. The object paramount, in my judgment, should be to prevent the disease, which, in large measure, can be accomplished if we are a unit as

regards our opinions of contagiousness, isolation and disinfection.

In view of the mortality from this dread scourge, a hundred fold more than from small-pox, I see no reason why our local board should not have this matter in charge, investigating each home invaded by this disease, and seeing to it that what is known regarding disinfection and isolation is rigidly enforced.

DR. OSCAR C. DE WOLF: I should like to put a pretty broad interrogation point after the assertion that pseudo-membranous croup and diphtheria are identical diseases. A few years ago I asked the opinion of the profession of this city on that point. I received about 500 replies, 60 per cent. of them assenting to this identity, and I have no doubt to-day that if a consensus of the professional opinion of this country and Europe were taken more than 60 per cent. would assent to the assertion that they are identical diseases, and yet, sir, I cannot escape from my own conviction—an opinion which will not, and ought not, to have very much weight in this society, yet I cannot escape from the conviction that there is a wide divergence between pseudo-membranous laryngitis—inflammatory laryngitis pure and simple, and epidemic diphtheria pure and simple. There is a vast divergence, it seems to me, in the condition of the patient passing through the disease; the one a local inflammatory condition, the other a true toxemia. And from the etiological stand-point, which must be the stand-point of preventive medicine, which must be the stand-point taken by the sanitarian who would be of use to the community which he serves, there is a still greater divergence. The one a local inflammatory condition, and the individual passing through it standing in the same relation to the public as a source of danger, as though he were suffering from an inflammatory rheumatism, no more, no less—two diseases produced by similar conditions. The other a true specific infection; the introduction of

a germ which reproduces itself in the organism to a limitless extent, a germ which lies at the basis as a cause of this the most atrocious malady which afflicts the child class on the face of this earth to-day. A veritable pestilential disease, which should be classed with other pestilential diseases, differing, perhaps, from them in epidemic manifestations, or degree of diffusibility throughout a neighborhood, yet essentially of the same character as scarlet fever, small-pox, cholera or yellow fever. It was, perhaps, a mistake, at least it has led to mistake, that those eminent men, Simon and Farr, spoke of diphtheria as a filth-disease. It has misled the popular understanding; it has misled professional understanding. The profession and the people have been hunting for the cause of diphtheria in filth of domicile and surrounding, and they have neglected that prime necessity to which the orator has referred to-night, that prime factor in the case, personal intercourse, and the infection which it carries. It is not true that any amount of filth, or heat, or moisture, or any combination of these, can produce the specific germ of diphtheria any more than manuring a field will produce a crop of corn. It is possible that filth, and heat, and moisture in a domicile and surrounding it increases the mortality of this disease; though that I am somewhat disposed to doubt, from recent experience.

Now let me say a single word touching the municipal control of this disease. I will follow the line of thought of the orator in what I have to say, and it stands in about this way. We have a communicable disease infecting a house, or epidemic manifestations of that disease in the neighborhood; its diffusion throughout that neighborhood depends entirely (following the suggestion of the orator) upon the facilities of personal intercourse; which I believe. At a previous meeting of this society a resolution was introduced, at my request, suggesting an expression of opinion from

this society touching the propriety of placarding that house. That resolution, much to my regret, was tabled. I will tell you why I regret it. The card upon the house indicates the professional understanding of the danger connected with the appearance of this disease in a neighborhood. It says to the family within the house, you are afflicted with one of the gravest diseases which can afflict your household, and you have become a source of danger to the neighborhood which surrounds you. It says to the passer-by, flee from that house as from a pestilence. That is the professional recognition of danger connected with that dwelling. The card on the house is a popular educator, leading the understanding of the neighborhood, of the people, up to the plane of the professional recognition of the danger. Two or three gentlemen have called upon me during the past fortnight to say they would like to see that card, but it was an annoyance to families, and the family charging the annoyance to the physician who reported it, says, Dr. A. is a mean man; we will discharge him and have Dr. B., who won't report it. I do not say that that may have induced this society to have tabled the resolution, because to admit that is to impeach the profession in the position in which it should stand before the community. One gentleman says, we will lose our patronage. I detest that word patronage, sir, in connection with our profession. I detest the word patron. You have patients, my dear sir; patients who love and respect you; *but you have no patrons*. You have patients who trust you to relieve them from their physical suffering, but the moment they feel that your neighbor is more competent to relieve them than yourself, it is their duty to themselves to go to your neighbor, and you would be the first man to hasten them. The more we get away from the idea of patronage and patrons the more we elevate our profession out of the odor and away from the methods

and manners of hucksters. If a family objects to the card, it is the duty of the physician to say to them, "that card represents my opinion of the danger which surrounds you, and if with that understanding you desire my services they are yours, but without that I refuse to serve you."

DR. J. R. CORBUS: I feel it my duty, as well as privilege, to state that I came from a neighboring city where diphtheria has been raging in an epidemic form for the past three years. It was my official duty as health officer to devise some means of checking the contagion, and the Mayor and City Council clothed me with power to use whatever means I saw fit, consistent with good judgment. The city of La Salle, where I came from, during the month of November two years ago had 95 cases of diphtheria and 35 deaths, out of a population of 10,000 inhabitants. There was no attempt made by the profession, or the former health officer, to prevent the intercourse of children and families, neither was there any attempt to placard the houses. I had an ordinance drawn up and passed, empowering me to placard the buildings, and to arrest anybody that was seen going into those houses after that notice was put up, and also to take immediate steps to isolate the patient, and, if necessary, to take charge of the patient and employ proper nurses. I carried these instructions out to the letter. The result of this procedure, with proper isolation and fumigation, lessened the disease the first month almost one-half, and the mortality in proportion. That system of placarding and isolating has since been followed. Not only did I isolate, but I used prophylactic treatment. There were some instances where the families were poor (La Salle is a poor mining district), and these were taken care of. The result of this procedure is that the mortality is very much lessened, and the disease is almost under control, although it has been raging as a contagious disease in that

city for the last three years. This ordinance was passed two years ago. At the next meeting of this society I will present the official report. I have it printed; also letters from physicians, calling my attention to the disease in families. The city of La Salle is composed of miners, who are dependent upon their daily labor, and when a family becomes stricken by disease, they have to have municipal help, and in that way I think it cost our city several thousand dollars in two years to support those people and give them proper treatment. In any instance where I thought the individual should remain in, I kept the whole family from mixing with their neighbors. Some of them thought it was pretty hard treatment, but it became a necessity, and they readily complied.

DR. J. G. KIERNAN: In regard to the contagion of diphtheria, while I do not lay claim to extensive experience, still there have been one or two instances under my direct observation that has raised the question in my mind whether it is not as desirable to isolate every case of diphtheria as rigidly as every case of scarlet fever. One instance I remember distinctly: A little girl had a favorite cat which she was in the habit of fondling. This occurred in a very healthy country neighborhood. The girl was taken sick with diphtheria; the cat was fondled for awhile, when the child maltreated it, and it ran away and made its appearance in a house two or three blocks distant. This child had contracted diphtheria in another place and brought it there. That house and the house where the cat took refuge were the only two houses in that village that had diphtheria. The people got scared at the cry of diphtheria and forced a quarantine. This instance proves to my mind that through the medium of domestic animals diphtheria can be conveyed. Such instances are frequent in the literature. During 1885 there was a diphtheria epidemic in Greece, conveyed by means of

domestic fowls; and another conveyed by turkeys, in Asia Minor. Whether these are reliable is a question, but still the appearance, from time to time, in the literature, of cases of diphtheria conveyed by animals enforces a caution.

DR. C. T. PARKES reported a case of  
AMPUTATION OF THE SHOULDER FOR SARCOMA.

Professor Adelmann gave an address before the Surgical Society of Berlin, on the 4th of June last, concerning the operations for removal of the upper extremity, together with the scapula, a part or whole of the clavicle. His address contains the history of the operation, placing the date of the first reported case at 1808. The operation was next performed between 1830 and 1840 five times, between 1840 and 1850 five times, during the next decade three times, during the next seventeen times, during the next thirteen times, and since 1880 twenty-six times, making in all seventy reported cases. He discusses the statistics of Paul Berger, comprising fifty-one cases, and his method of operation. Adelmann makes three classes: (1.) Cases in which the operation was performed after traumatism. (2.) Those in which the operation was performed for benignant tumors. (3.) Those in which the operation was performed for malignant tumors. In the first class there are fourteen cases, with nine recoveries; in the second class three cases, with three recoveries; in the third class fifty cases, with twenty-four recoveries. These are subdivided into sarcomita, of which there were twenty-six, enchondromita, seven, encephaloid tumors, of which there were four, the remaining number bearing different names in different languages.

Of the fifty cases operated for malignant tumors, in twenty-five the entire operation was completed at one sitting. Among these cases there were ten recoveries. Of the twenty-five cases having more than one operation each, nineteen cases were oper-

ated in two sittings, with ten recoveries. Four cases had three operations each, with three recoveries. Of two cases with six operations each, one recovered. These recoveries, however, simply apply to the operation itself. Deaths from recurrence after healing of the wound are not counted in the statistics. Among the twenty-five cases in whom several operations were performed, there are seventeen in whom the arm was primarily removed; but having recurrence it was found necessary to remove the scapula and clavicle. Prof. A. remarks that this should induce us in the future to perform the entire operation at first; because these cases were all seen early, and the chances for radical cure must necessarily have been good; as it was, only five of all these twenty-five cases remained free from recurrence in after years. One of these after thirty years; another after twenty, two after six and one after three. In the fifteen cases of death after one operation, seven cases were due to the operation or to the low condition of the patient at the time of operation. Two to shock; three to hæmorrhage, one to gangrene of the flaps, one to purulent pleuritis and one to secondary hæmorrhage. In eight further cases in which the wound was completely or almost completely healed, the patient died from recurrence; this occurring five times in the lungs, the time of recurrence varying from three years to four months after the operation. In view of the frequent occurrence of secondary tumors in the lungs, the author advises careful examination of this organ before the operation, and considers the evidence of the presence of tumors in the lungs as a contra-indication for operation. The percentage of recoveries from this operation for malignant in all the reported cases, is a little less than fifty per cent. Many methods of operation have been adopted by the different operators, but the plan of ligating both the sub-clavian artery and vein primarily, seems to be advisable.

I will show the case as rapidly as possible, in order to let the patient get out of the room. You see that the wound is almost healed, all except this one spot of granulation. The boy, from his general appearance, is much healthier and stronger in every way than previous to the operation. You will notice that there are quite a number of little pleats here, as if the sewing had not been done very well; there is, apparently, a superabundance of flap at the upper part, which might have been used to close this gap of ulceration, but this resulted because I had not any plan in view before the operation, and made my flaps a little too redundant, so that when the lower flap was brought in contact with the upper one, its fullness caused the foldings during apposition.

This case came before the clinic at Rush Medical College: A boy, quite reduced from pain, displaying merely an enlargement of the upper end of the humerus, implicating the shoulder joint. The growth surrounded the bone, but was not uniform in development. Manipulation showed seeming fluctuation, both on the anterior and posterior aspect of the tumor; so much so, that friends who sent him supposed that all that would be necessary would be to open an abscess. But the general aspect of the patient, and the general appearance of the tumor, rendered me suspicious of it, and, being suspicious as to its nature, I introduced an exploring needle in order to ascertain whether it contained pus. Instead of getting pus I got only blood. The exploring needle went through the soft tissues to the bone, calling attention to the fact that there was not only implication of the soft parts, but as well disease of the bone itself. The fact seemed apparent that it was a case of sarcoma, which had attacked the shoulder joint itself, probably commencing in the capsule and passing from it to the tissues around it, and that it would be very likely to recur after amputation, or other simpler operation upon the shoulder

joint. I put the case to the father, telling him that, as it was a malignant tumor, the only thing that seemed to me feasible was to do the operation of complete removal of the shoulder. He consented, and so the operation was done.

The immediate danger of the operation is hæmorrhage. There is another danger: the introduction of air into the veins when they are divided. All operations about the large vessels of the neck, or axillary space where the veins are apt to be patulous, are always a source of anxiety to the surgeon from their course. So, in order to overcome these immediate dangers, the thing to do primarily, before any attempt to make the incision for amputation, is to prevent the loss of blood directly and indirectly, by controlling the arterial and venous circulation, by ligating the subclavian artery and vein. These veins contain a large mass of blood, and if divided without control of them a good deal of blood would be lost, aside from the danger of the introduction of air into the vein.

Not having seen the reports of Paul Berger's method, I proceeded with the idea of controlling the hæmorrhage primarily. The first operation was done by an incision made above the clavicle, necessary for uncovering the subclavian artery, which was found and ligated close up to the side of the scalenus anticus muscle. The incision was then carried directly above to the top of the shoulder, the same as for amputation at the shoulder joint. This incision was prolonged in this way to the axillary space, and along the line of the axillary border of the scapula. As soon as the axilla was opened, the pectoralis major and minor muscles were divided, and instead of tying immediately the axillary vein, it was included between two hæmostatic forceps, and the vein divided between them; then the main trunks of the brachial plexus were divided. Then the arm was drawn over the front of the body, and this incision adopted for the excision of the scapula,

running along the line of the scapula so that the posterior flap was divided into two portions, and these two flaps were rapidly dissected off, until the posterior part of the scapula was uncovered, it raised from the chest wall, and the muscles divided, and the extremity removed. All bleeding points, with axillary vein, were now ligated, and the flaps united. This operation was not done upon any specific plan. Following the suggestion of Mr. May, who, in the December issue of the *Annals of Surgery*, reports two cases of this operation, I have looked through all the books of my library, but have not found any specific method given for this operation. It remained for Paul Berger to give a plan for it. He was led to the plan he suggests after several trials on the cadaver. The quickest and easiest way of doing the operation and securing the blood-vessels is his plan of procedure. His plan is to make the incision from the inner extremity of the clavicle outward to the top of the shoulder, and then immediately uncover the clavicle and turn it out of the way; that leaves the subclavian vessels exposed, so that they can be easily secured. You all remember well, as the result of your past experience, that as one uncovers the front of the axillary space, there is always to be seen a ridge across it, produced by the raising of loose tissue and upon the external anterior thoracic nerve. It is easily found, and the reason I call attention to it is that as you pass outward along this nerve, it leads directly to the interval between the artery and vein, with the clavicle out of the way; and hence to them the vessels are superficially situated, easily isolated, and also free from diverging branches. The artery should be tied in two places an inch apart, and divided, and the vein also; then the circulation is absolutely under control. May advises that just before the vein is tied the arm should be elevated and held up a few minutes, in order to let the venous blood drain out of it, thus saving as much

as possible of the blood for the individual. In my second case I applied the Esmarch bandage up to the axilla, squeezing the blood out of the veins entirely; then, as soon as the arteries are secured in this position, with a rapid cut of the scissors the brachial plexus can be divided, and the pectoralis minor and major severed. The flap portion of the operation is done in this way: Commence at the center of the anterior incision, and carry the knife directly across the anterior part of the axilla to the lower angle of the scapula; then commence at the outer edge of the incision posteriorly, and carry the knife behind the joint to the same point; rapidly reflect the posterior flap; then all the muscular attachments should be divided, and the extremity removed without any trouble. This gives a perfectly even anterior and posterior flap, coming together easily and nicely, and one avoids the unseemly appearance of the anterior part of this wound, which was occasioned by the anterior flap being too redundant.

This operation was done six weeks ago, and there has been no time since the operation when we felt particularly anxious about the patient's recovery except the first few days. The patient's perfect recovery has been interfered with from an accident, the effects of which you notice, the sloughing of the flaps, leaving this ulcer. In dissecting up the flaps one is compelled to keep close to the skin, diminishing greatly the nourishment of the immense piece of skin. The danger is increased if one is not careful to avoid wounding the post-scapular artery; so it is necessary to bear in mind the direction of these incisions in order to secure as nice a stump as possible.

The second case came in about two weeks after this, demonstrating the assertion that almost all cases come in couples. This case was a man 37 years old, who came in one afternoon with a tumor on the top of his shoulder, occupying the situation of the supra-spinous fossa. It had all the

indications, so far as external appearances went, of a fatty tumor. Those who have charge of clinics labor under this disadvantage in all their cases. They do not have the opportunity of examining them previously, as surgeons in hospitals do, hence they are apt to go into a case without as complete an examination as the case is entitled to. This was examined hastily and the history hastily passed over, and the suggestion made that in all probability it was not a fatty tumor; and from the rapidity of its growth would prove to be malignant, and one that was connected with the superficial tissues of the spinous fossa. But as soon as the incision was made and it was exposed we saw the mistake, because it proved to be a tumor that grew primarily from the shoulder joint, and particularly to some part of the capsular ligament crowding out from beneath the supra-spinous fossa, and developing as large as a cocoanut upon the man's shoulder. Previous to his going to sleep no consent had been obtained to do so radical an operation as entire ablation of the upper extremity, so only a temporizing operation was done, the removal of the tumor so far as external manifestations were concerned. After he came out from the ether and inquired about it and had the nature of the growth explained to him, after consulting with his friends, in about three weeks he decided to have this operation done, and it was done, but he died in fifty-six hours after the day of operation. He was slightly shocked by the operation but recovered from that, and for twenty-four hours was quite well, with only slight elevation of temperature and pulse; then he was taken with delirium and died in a comatose state. I do not know exactly what was the cause of death, but I am inclined to think that it was poor policy to do this severe operation so soon after the primary interference. The man was still depressed, and in great fear of the severity of this operation. All these facts were against him. In this case,

with the operation by the method I have described as advocated by Paul Berger, I am quite sure it was more quickly done and with more satisfaction to the operator, and if he had lived, to the patient.

This second case properly comes under the head of secondary operations. It is quite noticeable from the report read, that the cases done by machinery are all reported as recoveries, and it is questionable whether they have a place at all in the classification of this operation, because the cause of death after the accident is not reported at all.

*Stated Meeting, February 4.*

THE PRESIDENT IN THE CHAIR.

DR. C. T. PARKES reported some cases of  
SKIN GRAFTING BY THIERSCH'S METHOD.

Mr. A. Wielberg, age 48, came to the clinic in Rush Medical College January 19th, with a circular sarcoma of the right side of the head and face, measuring three inches in diameter and one and a half inches in thickness. The tumor was slightly movable, and had ulcerated throughout its superficial surface; had an angry appearance, and bled profusely upon slight manipulation. The patient had first noticed it five years ago. It had grown slowly at first, but more rapidly within the last few weeks. The face and scalp were very thoroughly disinfected, the scalp shaven, first being thoroughly washed with soap and water, then with clean water, then with bichloride of mercury,  $\frac{1}{2000}$ . The tumor was removed by a circular incision one-half inch from its edge on all sides; then it was dissected up, together with a portion of the temporal muscle. Then the zygoma and part of the malar was chiseled away, and almost all the tissues removed down to the temporal parietal and malar bones and upper part of parotid gland to the extent each one had been covered by the tumor. The vessels were ligated and the wound irrigated and dressed antiseptically. For

want of time the wound was not covered with skin at this time, but was permitted to granulate, which process went on in a perfectly normal and aseptic condition for ten days. I now proceeded to transplant skin on this surface by the method introduced by Prof. Thiersch.

This case was grafted one week ago, and now you see the entire surface is covered with skin. Without this treatment it would have taken this surface several months to heal.

In another case a child 8 years old had received enormous wounds from burns, almost completely covering one hand and the posterior surface of one thigh. These ulcers had been treated for several months without much benefit, and the child's leg was becoming more and more flexed at the knee. In one week each of these ulcers was covered with skin, and now the child, which was an emaciated cripple, looks fat and rosy, and has regained the use of its leg.

In a young man with atresia of one nostril, an opening was made and lined with skin, held in place by means of a plug of iodoform gauze covered with vaseline, and the patient dismissed with a good nostril two weeks later.

In another case the grafts became infected in some manner, and three-fourths of them were destroyed by the activity of the pus microbes.

Using no antiseptic solutions in dressing these wounds, it is evident that the greatest care must be taken to have most absolutely aseptic conditions preserved, for these delicate grafts are not able to compete with the microbes of suppuration in the struggle for existence, until they have gained a firm foothold. The method saves months of time to the patient, and hence money; enables him to get to work much earlier, and, too, saves the surgeon much annoyance. If irritation has anything to do with the quick return of malignant, this method certainly will diminish such danger. Again,

as the grafts can usually be obtained from the patient, the danger of inoculation of tuberculosis and other troubles, likely to occur after transplantation from other persons, is entirely avoided.

*' Stated Meeting, March 18, 1889.*

THE PRESIDENT IN THE CHAIR.

PROFESSOR HENRY M. LYMAN made some remarks on the

ETIOLOGY OF NEURALGIA,

which appear in another part of THE JOURNAL AND EXAMINER.

PROFESSOR DANIEL R. BROWER read a paper on

THE DIFFERENTIAL DIAGNOSIS OF NEURALGIA,  
(See this issue of THE JOURNAL.)

DR. H. N. MOYER read a paper on the

TREATMENT OF NEURALGIA,

in which he said it was the result of four or five years experience with the use of certain drugs. Remedies must be directed to the etiology and conditions which underlie the system. Morphia, by reason of its powerful anodyne effects, must rank foremost in the treatment of neuralgia. Antipyrin must be placed second because of its powerful analgesic effect. A simple, but by no means to be despised remedy, is the injection of cold water under the skin. He had found this method more uniformly successful than was generally supposed. The injection should be made as nearly as possible over the point of exit of the effect nerve or bony or fibrous canal. If asked what remedy had been most useful in the treatment of chronic and inveterate cases of neuralgia, he would say aconitine. Next to aconitine was quinine, which was a very valuable remedy in those cases which manifest decided periodicity, and in neuralgias of a distinctly malarial origin, it is the remedy *par excellence*. Hypodermic injections of strychnia are useful. Arsenic is a remedy greatly extolled, its greatest usefulness being in the malarial forms of the trouble, and it is necessary to resort to

it sometimes in those cases in which quinine fails. Thein might be mentioned, and unlike some of the before mentioned drugs, it seems to exert its principal action upon the peripheral nervous system, and theoretically it should be useful in the peripheral forms of neuralgia. Electricity should not be lost sight of in the treatment, and perhaps the form of current that is most useful is the galvanic. The polarity, however, seemed to make but little difference. The induced current may be useful in some cases, and is indicated. Static electricity produces results similar to those of the faradic current, and in some cases a cure is known to have been effected by extracting sparks from the region of the affected nerve when the patient is upon an insulated stool. Osmic acid, which has received extended notice of late, used in 30-minim doses of a one per cent. solution, injected over the site of the affected nerve, is one of the best means at the disposal of the physician. The solution should be freshly prepared, as decomposition takes place in a few hours, and then there is formation of abscess.

DR. F. C. HORTZ, in opening the discussion, said oculists had for many years been familiar with the fact that eye strain is very often associated with neuralgia of the supra-orbital and other nerves at more distant places from the eye, but as patients who consulted oculists did so mostly on account of disturbances which they directly referred to the eye, they (the oculists) had for a long time no opportunity to settle the question of the causative relation between eye strain and neuralgia. Within the past year or so, however, he thought the fact had been definitely settled that the disturbance in the functions of the eye, whether from focalizing apparatuses, their accommodation, or in the muscular adjustment of the two eyes in vision, a disturbance of the harmonious function of these apparatuses was a most prolific source of neuralgia, and it is not only the marked deviations from

the normal standard of refractive and accommodative function and manifest disturbance of the harmonious action of the erectile muscles which produce headaches, but a very slight degree of this disturbance—so slight, indeed, that in many cases patients are not aware of any error of refraction or accommodation until a searching examination is made by an expert. This had been mentioned within the last five years so frequently, and had been proven in so many instances, that he thought in any discussion on the etiology of neuralgia it ought to be spoken of, because he considered this as one of the most important advancements that had been made in practical medicine. The correction of such disturbances of the eye was in many instances the remedy for the relief of the neuralgia.

DR. LYMAN WARE said that in cases of cold affecting the membrane of the ear, which does not lead to any deep inflammation, but simply catarrhal difficulties, neuralgia occurs frequently, and invariably extends to different portions of the head. He would like to emphasize what Dr. Moyer has said in the treatment regarding osmic acid. A few years ago a gentleman had persistent neuralgia located in one of his fingers. The affected member had been treated several times, and he believed a portion of the nerve had been stretched or excised without permanently relieving the neuralgia. The neuralgia returned a few months after the operation. He resorted to osmic acid, and the first injection caused the neuralgia to completely disappear. This was the only case in which he had tried it.

DR. C. P. PRUYN said he often found the common source of neuralgia to be a calcification in the pulp of a tooth proper. There was nothing to lead one to think that it was a particular tooth that caused the neuralgia, hence the diagnosis was oftentimes made by exclusion of every known cause, and then perhaps the dentist

would drill into a tooth that had every appearance of being perfectly sound and find within the bony walls this calcific deposit.

DR. W. F. COLEMAN said that within the last two or three weeks he had met with three cases of neuralgia of the ear, due to reflex irritation, or that occurred through dental caries. These cases were referred to a dentist, who, after removing the caries, relieved the neuralgia in the ear.

PROFESSOR A. E. HOADLEY's experience had not been very extensive in operating upon the nervous system for the relief of neuralgia. One of the greatest difficulties standing in the way of surgeons is in locating the lesion that causes the neuralgic pain. The most common, persistent neuralgia requiring operative interference, and which gives the most trouble in making a diagnosis, is probably that of the fifth nerve. He then cited two cases to illustrate the difficulties of diagnosis.

DR. R. H. BABCOCK said there was a class of neuralgias that interested him, and more particularly angina pectoris, which is popularly supposed to be almost exclusively associated with organic disease of the heart. There were also cases of neuralgia of the heart which are inorganic, that is, not associated with organic disease of the organ, and these came under two heads, viz., *angina reflectoria*, and *angina vasomotoria*. He was satisfied that these two conditions were frequently associated with one or the same cause. He recalled to mind the case of a lady, 35 years of age, who is subject to attacks of angina with pronounced vaso-motor spasm, as shown by coldness of the extremities, paleness of the face, marked arterial tension, etc. This case he thinks is probably due to irritation in the pelvis. A careful examination failed to elicit any cardiac disease. Cases of inorganic angina pectoris are more likely to be found in the female than in the male sex, since the former are of a more highly nervous organization, and are

subject to so many pelvic diseases which exert a specially marked influence upon the general system.

PROFESSOR FRANK BILLINGS had a theory of neuralgia, based, however, on little broader grounds, and he hoped to prove part of it in the not very distant future. He believed that more general neuralgias depended upon auto-infection in an individual than upon any other one cause, and this self-infection comes, as a rule, from the digestive tract; that it is located in the tract of a certain nerve. For instance, if there is an error of refraction, the patient will have headache; if there is ovarian difficulty the patient suffers from neuralgia connected with that part of the body. The trouble connected with the digestive tract is the cause of more neuralgias about the heart than is recognized by those who make a specialty of cardiac diseases. With inorganic heart disease there is always more or less venous congestion of the liver, stomach, spleen, and other organs connected with the portal system. If Dr. Babcock had carefully inquired into the cause of the neuralgia in the case he reported, he would find it to be associated with indigestion, brought about by a too frequent indulgence in sweets and starchy foods, thus setting up fermentation within the digestive tract.

#### CHICAGO PATHOLOGICAL SOCIETY.

*Stated Meeting, March 11, 1889.*

PRESIDENT I. N. DANFORTH, M.D., IN THE CHAIR.

DR. J. R. KOEHN read a paper entitled  
ANTIPYRIN IN A CASE OF TYPHOID FEVER.

The patient was Mr. G., 29 years of age, parents, brothers and sisters all living and healthy. He was called to see the patient on January 6th. When 16 years of age he accidentally received a gunshot wound in the left side of the abdomen just below the spleen, exposing the gut and passing out at the back. The wound entirely healed, causing only an occasional pain.

Patient had always been healthy up to the time of the accident and since, until New Year's day, when he was attacked with typhoid. Dr. Koehn ordered antipyrin to be given in ten grain doses every three hours; laudanum in ten drop doses, to be given in case of vomiting. A diet of liquid foods was prescribed, consisting of beef tea and malted milk. The night following the 12th he was called to see the patient post-haste. He found him suffering intense pain in both legs, but more in the left. Patient said he felt his feet getting cold and going to sleep, this feeling gradually extending to the knee-joint. Rubbing and turpentine fomentations soon restored the natural feeling to the right leg and foot, but the left side did not respond at all. He had a prickling sensation in the sole of the foot and sharp shooting pain in the calf of the leg. This was so intense that a hypodermic of  $\frac{1}{2}$  grain morphine had not the slightest effect. The next morning temperature was a little over normal; pulse 104; heart sounds perfect; pain still intense. Inspection of the limb showed the color of the toes and sole of the foot to be of a dead white, dorsal surface of a mottled blue; no swelling. Patient said he felt as though the sole of the foot was being torn off; sensation impaired half way up the knee. Motor power almost entirely destroyed in the ankle and foot. Evening temperature on the 14th day was 100°; pulse 110. Since the morning of the 13th day the leg had been elevated on a pillow and hot fomentations applied. The foot and ankle half way up to the knee had now assumed a dull bluish red color; there was crepitation of emphysema in some parts, swelling increasing rapidly. All the signs of moist gangrene were present. The next day continuation of symptoms; temperature 103°; pulse 130, small and thready. Internal remedies had been administered from the onset of the complication. The patient was gradually growing worse. On

the 19th day the temperature was 103.5°; pulse 125; patient delirious from overstimulation. Chloral hydrate was ordered in 15-grain doses. This day the case passed out of Dr. Koehn's hands. Dr. C. Fenger, who was called in on the 22d day, found an imperfect line of demarkation, and about the condition that was present since the third day of the complication.

Auscultation gave a whizzing sound on the left side over the femoral artery, which was not heard on the right side and resembled the aneurismal thrill. Amputation was performed at the middle third of the thigh on the afternoon of the 23d day. The arteries upon being cut and tied did not exhibit the characteristic jerking with each pulsation, but were more of a pipe-stem consistency. Patient gradually grew weaker and died twenty-four hours after the operation.

Dr. Koehn in summing up, said: In searching for the cause of this complication we meet with great difficulties, as a post-mortem examination could not be obtained, and the condition of the internal organs, especially the heart, is unknown. The history of the case is free from any syphilitic taint. The remaining causes or theories that might be advanced are the following: The existence of an arterial disease described by Moxon as "inflammatory mollities," the occurrence of swelling, and softening of the arterial tunics in circumscribed spots, which become flabby and elastic. He believes that this condition depends on a peculiar state of the system and is found in young hard-working men; or, the existence of "endarteris deformans" (atheroma), which is always caused by over-exertion. The non-elastic state of the arteries in the stump shows that the large vessels above Poupart's ligament must have been diseased. Embolic plugging occurring in more peripheral vessels, as a result of detached fibrinous clots and atheromatous deposits, being washed away.

It is not impossible that one of these conditions of the circulatory system may have existed prior to the attack of the fever; the typhoid state causing impure blood, retarding the flow through the capillaries, increasing the tension of the arterial system, and thus favoring the development of the complication which caused such dire results.

Antipyrin in this case acted like magic in reducing temperature and giving the patient relief. But in causing such a profound impression on the system there is reason to believe that it also produces some important changes. Although reports in regard to serious organic changes are mostly negative, Professor Tullio reports 8 cases of articular rheumatism in which its action developed serous pericarditis, four others endo-pericarditis with subsequent mitral trouble. In another case transient albuminuria occurred, which ceased when the administration of the drug was discontinued.

Dr. C. D. WESCOTT read a paper entitled, THE ACCIDENTAL COMPLICATIONS OF TYPHOID FEVER,

in which he quoted considerably from Dr. Bayard Holmes' article on "Secondary Mixed Infection in Typhoid Fever". (See THE JOURNAL AND EXAMINER, August, 1888.)

In speaking of the treatment of typhoid fever, Dr. Wescott said: The discovery of the specific microbe of typhoid fever has not, as yet, made it possible to prevent the disease, but in the light of the most recent studies, it would seem that typhoid fever, pure and simple, requires little more than careful management, and that all of the real danger to our patients is due to the secondary infections, which, possibly, we can prevent, when we fully understand them. If this can be done, may we not make typhoid fever, if not preventable, a comparatively non-fatal disease?

The treatment, *par excellence*, of the complications of typhoid is most certainly preventive, and in addition to keeping our

patient as quiet and comfortable as possible, and sustaining him with proper nourishment in proper amount and at proper intervals, I think we should make him as aseptic as possible both inside and out. *Inside* by means of the intestinal antiseptics, naphthol and naphthaline, with occasional salines, unless there is exhausting diarrhoea; *externally* by means of antiseptic baths and a clean environment.

I also believe that we can do a great deal to maintain the condition of the blood and to conserve the flagging strength by the judicious administration, from the beginning, of such tonics as arseniate of strychnia, and digitaline.

In regard to antipyretics, I believe the safest we have, when their administration is understood, are *aconitine* and *veratrine*; but I do not use the chemical antipyretics myself, if I can keep my patient's temperature below  $103^{\circ}$  by resorting to tepid sponging. I certainly am not in favor of the continued and routine use of antipyrin, and believe that the chemical antipyretics, as a class, do not shorten nor materially modify the course of typhoid fever, or its intestinal lesion, and I think the largest portion of the most recent evidence fully confirms me in my opinion.

I do not think, however, that the disastrous termination of Dr. Koehn's case was due to the fact that he gave his patient antipyrin. It was probably a case of secondary infection causing thrombus, which resulted in gangrene of the leg, and the result was inevitable.

PROFESSOR A. E. HOADLY said the case reported by Dr. Koehn was one of remarkable interest; but he could not see how we could consider the condition of gangrene a complication of typhoid fever any more than any other disease. Some four weeks ago he had an elderly lady patient, who died from fatty degeneration of the heart, and the same train of symptoms were present in that case as in the one cited with moist gangrene. From the time of the

onset of the pain, which marked the time of occlusion of the arteries, she lived about ten or twelve days, and he regarded it as a case of embolism. He was much pleased with Dr. Wescott's review of the complications, and the subject was one which would give the profession, when thoroughly understood, a new impetus and valuable addition to the treatment of typhoid fever. In this connection he would cite a complication of the disease which can just as well be denominated such as the case of gangrene of the leg which had been referred to.

A child, 11 years of age, was attacked with typhoid fever on the 28th of December last. About the 25th of January there was some trouble of the hip joint, which brought on neuro-muscular phenomena, fixation with flexion and adduction. The child was convalescing, and when sitting in a chair the adduction was well marked. The flexion, tenderness and pain increased, and counter-irritation was applied. Anodynes were given; the child had developed a high temperature. He was called in consultation to see what could be done for the joint disease. On examination he found the hip rounded, tense, and painful; temperature of  $103.5^{\circ}$ ; pulse 130 to 135. He concluded there was suppurative of the hip joint. He gave an anæsthetic for the purpose of correcting the position of the joint. He found it was luxated. He reduced the dislocation, applied extension, and the deformity largely disappeared. There was some effusion in the joint. He waited a few days for more positive symptoms before aspirating or operating, but the temperature came down the second day to about normal. He then lightened up the weight, and adduction and dislocation again took place in spite of everything. He again administered an anæsthetic, and reduced the dislocation. He then applied a heavier weight and kept it on for a couple of weeks. The child is now sitting up, moving about, perfectly comfortable and

straight. There is no swelling, no tenderness, but a moderate amount of flexion. This patient practically recovered in five weeks.

DR. W. F. LEWIS was glad some one had had a similar experience to his own, although the termination was not the same. The case he desired to report was that of a young lady who was attacked with typhoid fever, the abdomen being greatly distended, pulse of 120. He saw the patient about five weeks ago for the first time. She had previously been attended by a physician and dismissed from her first sickness about two weeks before the second illness set in. The temperature at no time arose above  $103.5^{\circ}$ . The case progressed very nicely until the 10th or 12th day, when the patient complained of pain in the ankle, calf of the leg, and in the left groin. There was very little delirium, if any, during the entire progress of the case. The first symptom complained of was pain in the left groin. Shortly afterward there was swelling, and the left limb was so flexed that it was difficult to straighten it. To alleviate the pain liniments of cotton, belladonna and camphorated soap were applied, after which it gradually abated. When the swelling had become quite tense, he applied the faradic current, and after the first application there was a modification of the pain. Two more electrical applications were made, when there was scarcely any pain experienced. On the fourth day from the time of the commencement of the faradic current, the swelling had entirely disappeared, and the limb was then easily straightened. He would like to inquire whether any of the members had used the continuous or interrupted current in such cases.

DR. KOEHN said the faradic current had been used (but not persistently) in his case for a few days without any beneficial result.

PROFESSOR H. M. LYMAN called attention to the extensive field covered by typhoid

lesions. It is a rare thing to see very many of the complications appear in the same individual, but if we take a large number of cases of the disease, hardly any part of the body could be found that had not been, or would not be, involved as a complication. He would call attention more particularly to the manner in which the nervous system is sometimes complicated as a consequence of the disease. And there were two ways in which the nervous system might become influenced by it. In the first place, we may have the direct poisonous effect of the typhoid bacillus and its excreta upon the brain, the spinal cord, and the nervous apparatuses of the body. This usually manifests itself in the ordinary course of the disease. Then later, after the typhoid fever proper has run its course, we may have complications involving the same organization, which, however, are of a somewhat different character. For example, we may have, as a complication, the brain affected in the early stage of the fever and during its course, which resembles more the effects of a subacute meningitis than what would be observed later. Post-mortem examination of patients dying in this condition shows an exudation along the walls of the vessels. There is a somewhat increased quantity of cerebro-spinal fluid, and a slight turbidity of the membranes. But when the complication occurs late (after the typhoid poison itself has run its course, and perhaps has been eliminated from the body) we may have disorder of the brain consequent upon an impoverished condition of the blood or upon an exhausted state of the brain and nervous system. In the late stage we may have a form of meningitis which involves the membranes of the brain and spinal cord in such a way as to considerably resemble the phenomena of cerebro-spinal meningitis. These phenomena (which present themselves as complications in typhoid fever) do not exhibit themselves in the early stages of the disease. They

vary according to the period of their manifestation.

In the spinal cord we may have complications, and these may take the character of a somewhat acute form of meningitis, or of chronic degenerations of the spinal cord itself, producing the various phenomena of muscular paralysis and atrophy consequent upon disease of the trophic centers in the grey matter of the spinal cord.

Then, lastly, we may have peripheral inflammations involving the nerves themselves, so that the patient will manifest loss of sensibility and power of motion in certain parts of the body, according to the diffusion of the inflammatory condition involving the nerves. These cases, of course, are rare, but they do occur after typhoid fever just as they occur after any fever that is produced by toxæmia. They may be observed after scarlet fever, measles, diphtheria not unfrequently and after small-pox. These are the principal complications that involve the nervous system. They are acute and resemble the more common forms of inflammation during the time of operation of the typhoid poison, but resemble more the forms of chronic degeneration of the brain, spinal cord and nerves, trunks and branches when they occur late, after the typhoid fever has expended its force.

DR. J. E. COLBURN said that some years ago when he was in general practice in northern New York quinine was used in large doses, and as a result ear complications developed; in some cases there was more or less complete deafness, and this was attributed very largely to the excessive use of the drug. He understands it is not used so extensively now, and that other remedies are used in its place. He would like to ask if the same frequency of deafness occurs through the use of other remedies, where there is no marked brain lesion or nervous organic lesion following. The quinine undoubtedly has something to do

with the production of the deafness where it is used extensively, and he would like to know whether the same results followed its use in typhoid fever.

Recently, he had observed a case in which neuro-retinitis followed upon a typhoid condition within three weeks. He saw the patient at her home. In this case, during and immediately subsequent to the fever, there were no symptoms of marked brain lesion, delirium, or disturbance, except the retinitis, which was very marked, and ran a rather acute course, terminating apparently without very much atrophy.

DR. A. HINDE had seen neuro-retinitis follow two or three cases of typhoid fever. The cases were observed in the convalescing period. In reply to Dr. Colburn, who asked whether there were any nervous symptoms observed during the fever, Dr. Hinde said that he did not see the cases during the fever.

In reply to Dr. John D. Skeer, who asked how much quinine was given, Dr. Colburn said he had not given any. He had only treated the neuro-retinitis present.

PROFESSOR HOADLEY had a case to report in this connection. The patient, 13 years of age, in the second week of typhoid fever, became absolutely deaf, this condition continuing some three weeks after convalescence had been established. There was no quinine given. The deafness came on gradually. There was no nervous disturbance or brain lesion. It was a very mild case of typhoid and ran a pleasant course. The patient fully recovered from the deafness in about six weeks from the time it commenced.

DR. BLINN reported the case of a boy, 3½ years old, who came under her observation two years ago. A sister had died of typhoid fever, and another brother had been ill with the disease, but recovered. The patient was sick about five weeks. After the second week he became blind, deaf, dumb, and was greatly emaciated. There was very little hope of recovery, but

in the course of three weeks from the time he began to lose his senses, he slowly and completely recovered, so that now he is bright and healthy.

THE PRESIDENT said he was called to see the case reported by Dr. Koehn, and made the suggestion that possibly the gangrene of the leg may have been due to antipyrin. He ventured this suggestion because his experience with the drug in St. Luke's Hospital had been very unfavorable. The internes of the institution had given it in from 15 to 20 grains. When the temperature arose above a certain point—perhaps 102 or thereabouts—antipyrin was administered to force it down, and in two or three cases alarming depression followed its use. He had been cautious in its use since that time for two reasons: (1) Because of the consequent cardiac failure, and (2) because he was convinced that, so far as the typhoid fever went, it did not do any good in either shortening the disease, or modifying the lesions consequent upon it. He thought it was not improbable that there had been a venous thrombus due to cardiac failure.

A few days after he was called to see Dr. Koehn's case he went East, and while in a doctor's office in Boston he picked up a copy of the *Boston Medical and Surgical Journal*, and saw an account of a similar case in which gangrene of the left leg had followed typhoid fever. Amputation was performed, and the patient recovered. There was no account given in the journal of an examination of the vessels of the leg, nor was there any theory advanced as to the cause of it. The writer, however, called attention to similar cases cited in Pepper's System of Medicine, in the article by Hutchinson, of Philadelphia. If the patient's leg had been preserved and examined it would either substantiate or overthrow the bacillus theory. He was not, as yet, an absolute convert to the so-called microbic theory of disease.

DR. J. M. PATTON wished to speak of antipyrin as possibly causing the condition

found in the case reported by Dr. Koehn. It recalled a case of typhoid fever that he had treated two or three years ago when antipyrin was first introduced as a remedy in the treatment of the disease. The patient, a married woman, 22 years of age, was in good health up to the time of the attack. He had used all the antipyretics he could think of without bringing the temperature below 102°. Quinine the patient could not tolerate, either the sulphate or bromide, so he used antipyrin. The foreign journals were then recommending it in gramme doses, to be administered in quick succession. He gave the patient three gramme doses the next day, and about four o'clock in the afternoon the husband came for him very much frightened, and said his wife was going to die. Dr. Patton found the patient in a rather peculiar condition, the whole surface of the body being of a red hue, which was produced by dilatation of the capillary vessels. The patient was in a nervous condition. He assured the relatives and friends she would be all right. He remained to await developments. The temperature when the antipyrin was given was 103°; at the time he saw her it was about 99½°. He remained with the patient about two hours, when the natural color returned, and the temperature arose to 104° before he left the house. The next day the patient was very much depressed, and developed a nervous twitching about the muscles of the mouth, which she was unable to control. The thought at the time occurred to him that antipyrin administered to persons of her constitution in typhoid fever was a dangerous remedy. If the drug has such an effect on the vessels, he could not see why it might not produce such a condition. Whether a thrombus is indirectly due to microbes or ptomaines, we must necessarily have some local condition, otherwise we should have thrombosis in all cases of severe poisoning by microbes, and it seemed to him that antipyrin may (by

dilating the vessels and changing the blood pressure as it did in this instance) furnish the conditions necessary for a thrombus to develop.

DR. WESCOTT, in closing the discussion, said that Bristow and other authorities mention thrombosis causing gangrene of the leg, following or complicating typhoid fever even before antipyrin was given. He thought the theory was established, as well as anything could be established in bacteriology, that there is a specific bacillus which with its ptomaine so influences the human body as to give us the collection of symptoms that we call typhoid fever.

DR. L. B. HAYMAN read a paper on the  
HYPODERMIC USE OF PILOCARPINE IN SEROUS EFFUSIONS,

in which he said he had used pilocarpine in a number of instances, both as a galactagogue and as a diaphoretic, and in one case the use of the drug was continued for several months with most gratifying results.

*Case.*—The patient was a young lady of 17 who came to the city from Earlville, Illinois, suffering from chronic Bright's disease. She was under the care of Professor I. N. Danforth, who, upon leaving the city for a time, placed her in my charge, and I saw her for the first time on the 5th of September, 1887. She had been sick for about eight months, and was in the later stages of chronic nephritis. There was extreme œdema of all the cellular tissues of the body, so that the patient could not move from her chair. Both pleural sacs contained fluid, the respiration was difficult and there was a harsh dry cough; the heart was labored in its action. For days the patient had been unable to lie down and spent the nights in her chair, catching an occasional short nap with her head resting upon a pillow on her lap. She was restless and nervous, although very patient. But little nourishment could be retained, and the end was apparently so near that relatives had been summoned.

Diaphoresis had been invited by hot air baths, and diuretics and hydragogue cathartics had been freely used; but still the dropsy increased. The swollen feet had been tapped twice, allowing of considerable escape of serum, with but temporary benefit.

An examination of the scanty urine showed an immense deposit of albumen, about three-fourths of the contents of the test tube solidifying with heat. The urine was of high specific gravity, and showed under the microscope a large number of blood corpuscles, clouds of granular and epithelial casts, with renal epithelium.

The weak, rapid heart, and the labored respiration both contra-indicated the use of pilocarpine, but other remedies had failed and it offered the only chance of benefit, so I decided to use it. The patient was placed in bed—seated, for she could not lie—and a hot air apparatus was placed under the blankets. She was given half an ounce of brandy, and then a hypodermic injection of  $\frac{1}{3}$  of a grain of the muriate of pilocarpine. In about a minute the constitutional effects of the drug appeared, and soon there was an abundant secretion of saliva and the attendants were busy wiping the streams of perspiration from her face and neck. There was coughing with free expectoration of mucus; the respirations became easier, and the pulse, which had been about 120 to the minute, fell to 100.

The patient expressed herself as wonderfully relieved. The perspiration lasted about two hours and was followed by a quiet night. The injection was repeated on the following day with similar results. In each case the sweating was profuse and was followed by a marked diminution in the nervous symptoms. The injections were given daily for several weeks, accompanied by iron, digitalis and hydragogue cathartics. Under this treatment the dropsy steadily diminished, so that soon the patient could lie down; the nervousness was lessened, and there was a gain in appetite and strength. The urine was also improved.

The amount of albumen was much diminished and the casts, at first so numerous, were found with difficulty. There seemed to be real improvement, not only in the general symptoms, but in the condition of the kidney as well.

The gain was so gratifying that, after about four weeks, the patient, feeling sure of ultimate recovery, began to speak of returning home. She thought the treatment might still be carried on at her home in Earlville, and on the 5th of October, contrary to advice, she took the train for home.

Because of the condition of the heart, her home physician, Dr. E. T. Goble, of Earlville, Illinois, would not use the pilocarpine until after he had communicated with me, and in the two or more weeks which intervened the dropsy rapidly returned. The hypodermics were then recommenced, and persisted in almost daily until her death, which occurred on the 26th day of May following, about eight months later.

The pilocarpine seemed always to benefit, and the patient would plead for the hypodermics. They always relieved the nervousness,—probably by the elimination of urea, quieted and slowed the heart and gave ease and comfort. It is quite certain in this case, that while it did not avert the fatal issue, the use of the drug gave comfort, and prolonged life for many months.

#### **HARVEIAN SOCIETY OF LONDON.**

*Meeting Held March 14th, 1889.*

THE PRESIDENT, THOMAS BUZZARD, M.D.,  
F.R.C.P., IN THE CHAIR.

ON PRE-CANCEROUS CONDITIONS OF THE TONGUE.

MR. BUTLIN in his paper dealt chiefly with three points: 1. The proportion of cases of cancer of the tongue in which the disease is preceded by a well-recognized pre-cancerous condition. 2. The relative importance of various pre-cancerous conditions. 3. The question of the early and

free removal of some pre-cancerous conditions. In a certain number of cases which had been under the care of the author, cancer of the tongue had been preceded by a pre-cancerous condition in at least 70 per cent. Warty growths appeared to be the most dangerous of the conditions which actually and immediately precede cancer, and these warty growths were shown to be more frequent than is generally believed. The question was raised whether it would not be right, in cases of leucoma and chronic superficial glossitis, in which warts and warty growths form on the surface of the tongue, to remove the whole of the diseased area of the tongue, or certainly the fore part of the tongue, instead of merely removing the warty growth and an area of the surrounding tissue. Two cases were related in which simple warty growths formed on leukomatous tongues, and were removed, and in which at a later period cancer developed, but not in the seat of the removal of the warts. The use of liquor arsenicalis internally was recommended in all cases of chronic affection of the surface of the tongue, in which the disease is associated with various forms of chronic affection of the general integument (non-specific). Several cases were related to show the advantage of the removal of early cancerous affections of the tongue.

MR. JACOBSON said that he thought the pre-cancerous conditions were better marked in the tongue than in any other part, unless it might be occasionally in the breast. Yet sufficient use was not yet made of the knowledge of these pre-cancerous stages to remove the disease before the advent of the malignant stage. He believed it was most important for general practitioners to recognize these conditions that they might advise their patients to be operated upon in time. Mr. Jacobson showed a patient who had syphilitic leucoma of the tongue, with constant rawness and a small spot of induration. This was recognized as pre-cancerous and the half of

the tongue removed. His speech now was but little affected. Mr. Jacobson strongly advocated the removal of one-half the tongue, and believed that the speech was always good after such an operation. Another patient was shown who had a pre-cancerous condition of the tongue, but declined operation for fear of interference with the practice of his profession as a player on a wind instrument. Mr. Jacobson had found it very difficult to persuade patients to be operated upon, unless they were convinced that the disease was actually cancerous. Mr. Jacobson also commented upon the pathological anatomy of these disorders. The affection was often latent for a time, but liable to sudden outbursts. Small operations gave rise to severe hæmorrhage which obscured the view of the operator and led to diseased portions being left behind.

MR. PICKERING PICK thought that in many cases chronic superficial glossitis in the various forms was a curable affection, and not every case required removal. He had found that the exhibition of arsenic in large doses was of remarkable use. At the same time the case must be watched carefully, and the disease removed freely on the slightest sign of epithelial change.

MR. BARKER agreed with Mr. Butlin in most points. He believed that leukoma once started was rarely recovered from. It might last a great number of years, but his experience was that it never changed except for the worst. For its relief he relied upon mild solvents, like carbonate of soda, which perhaps acted by rendering the secretions of the mouth less irritating, and promoted the exfoliation of epithelium. As long as the disease was pre-cancerous he would like to leave it alone, and remove it at the moment it became cancerous. He somewhat objected to the term pre-cancerous. As long as there was no induration, he thought the disease might be left alone, but the patient should be constantly watched by his medical adviser. Mr. Barker did

not approve of removing wedge-shaped portions. It was better to remove the tongue within reasonable limits. Special attention should be paid in the operation to the deep dissection by the side of the tongue where the lymphatics ran. Epithelioma of the tongue had a great power of diffusing itself. Mr. Barker was not in favor of removing the tongue by halves, for the remainder of the tongue in such cases got bound down by scars.

MR. PYE agreed with Mr. Barker as to partial removal. He asked whether it was not better to remove the whole tongue in cases of leukoma. However, he thought that the removed half of the tongue was not so bound down after partial removal as appeared to be the case. He also asked whether it were not possible to remove the superficial layer of the tongue when affected by leukoma.

MR. LOCKWOOD showed a specimen which exhibited leukoma and papilloma. Really pre-cancerous conditions might be partially removed, but true cancer should be removed as widely as possible.

DR. CLEVELAND remarked on the conditions which predispose to cancer. Smokers were particularly liable, and he related several cases illustrating this, where early recognition and operation resulted in cure.

DR. DREW asked whether ring-worm of the tongue was a pre-cancerous condition.

THE PRESIDENT asked whether ulcers or clefts in patients who had suffered from syphilis were to be distinguished accurately as syphilitic, and successfully treated by iodide of potassium. He had seen such an ulcer heal for a time under the use of the drug, and afterwards recur as cancer. He remarked that epileptics were prone to bite the tongue constantly on one side, and he asked whether this had been noted as a precedent of cancer.

MR. BUTLIN, in reply, said that there was undoubtedly a true syphilitic gummatous ulcer of the tongue which healed under iodide of potassium. He had seen a bite

excite cancer. He thought that the majority of cancers ulcerated unless they were covered by horny epithelium. He had only seen one case of leukoma absolutely recover, and that under the use of arsenic. He thought that leukoma and superficial glossitis predisposed to cancer, but patients might have such conditions for many years without cancer developing. The wart on a leukomatous base never gets well, and always becomes cancerous. He thought it dangerous to attempt to cut away the superficial layer of the tongue in leukoma.—*The Medical Press*, April 3, 1889.

### BOOK REVIEWS.

**HANDBOOK OF THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE THROAT, NOSE AND NASO-PHARYNX.** By CARL SEILER, M. D. Third edition, 12mo. Pp. xii., 373. Philadelphia: Lea Brothers & Co. 1889. Chicago: A. C. McClurg & Co.

Physicians who are familiar with the manual on Microscopical Technology by this author need not be told that this handbook is a good one. Many of the good qualities of the former are to be found in the latter. Few medical writers surpass this author in ability to make his meaning perfectly clear in few words, and in discrimination in selection, both of topics and of methods. In this handbook the methods described are his own, but whenever his instruments or ideas are borrowed he mentions their source, and gives ample credit to their originators. In this connection it is pertinent to observe that when he makes an alteration in an instrument he has a better reason than a simply vainglorious desire to attach his own name, along with the new device, to the instrument. A case in point is his attachment to the Jarvis snare, to be used in removing anterior nasal hypertrophies.

In addition to the points mentioned, what may be called the distinguishing features of the book are as follows: 1. A chapter on the physiology of the voice and articulate speech.

2. A blank form for records of cases, the use of which will facilitate taking a record of conditions and also insure thoroughness in observing and recording them.

3. The illustrations, many of which are new and quite unusually well drawn.

4. A chapter on hay-fever. The author, in common with many others, believes that the dis-

ease may be controlled, but he does not exactly agree with his illustrious fellow townsman, the editor of the *Annual of the Universal Medical Sciences*, as to the comparative value of the galvano-cautery, and of acids in the treatment of the lesion.

The author evidently never has himself been a sufferer with that form of chronic pharyngitis known as *p. sicca* or he would not dismiss it in so summary a way as he does.

The chromolithographic plates which are bound with the text illustrate well the imperfections and apparent limitations of that art.

The book deserves a large sale, especially among general practitioners, hackneyed though the phrase is. E. W.

**SURGICAL BACTERIOLOGY.** By NICHOLAS SENN, M.D., Ph.D., Professor of Principles of Surgery and Surgical Pathology, Rush Medical College, Chicago. 8vo., pp. 270. Philadelphia: Lea Brothers & Company. 1889. Chicago: W. T. Keener.

The twenty-two chapters of this book are devoted to the following subjects: Hereditary transmission of microbic diseases; Do pathogenic microorganisms exist in the healthy body?; Sources of infection; Localization of microbes; Elimination of pathogenic microorganisms; Antagonism amongst microorganisms; Inflammation; Suppuration; Gangrene; Septicæmia; Pyæmia; Erysipelas; Erysipeloid; Noma; Tetanus; Tuberculosis; Anthrax; Glanders (*Malleus Humidus*); Actinomycosis hominis; Gonorrhoea; Syphilis; On the alleged microbic origin of tumors. Each one of these subjects is discussed with the care, minuteness, and exactness characteristic of all Dr. Senn's work. They that recognize the fact that surgical pathology is now almost synonymous with surgical bacteriology should not fail to study the book; others should study it and become convinced. It contains some well executed colored plates, reproduced from *Klebs' Lehrbuch der pathologischen Anatomie*.

**INTESTINAL SURGERY.** By N. SENN, M. D., Ph. D. 8vo. Pp. vii and 269. Price \$2.50. Chicago: W. T. Keener. 1889.

The limits of a book notice will not permit an adequate review of this volume, and this fact may excuse a quotation from the preface: "While the following pages are not intended to serve the purpose of a complete text-book on Intestinal Surgery, still the author hopes that they may contain some new facts and suggestions which will prove useful to those who practice this branch of surgery." "The first part of the book contains a résumé of the best literature on the

subject of intestinal obstruction which has been arranged in a systematic manner for ready reference." "The second part represents the author's own original work, made with special reference to the treatment of intestinal obstruction and the diagnosis of perforation of the intestinal canal; to which is added the report of three cases of gunshot wound of the abdomen, in which inflation with hydrogen gas proved a positive test in making a correct diagnosis, before the abdomen was opened. One of the principal objects in publishing these papers in book form is to stimulate the young men in our profession to enter the field of original investigation, as the author is firmly convinced that experimental research constitutes the shortest and safest route to the perfection of the principles and practice of intestinal surgery."

Those who are familiar with the author's style of work know what this volume must be, and those who are not, may be assured that it is eminently creditable to the author himself, and an honor to the cisatlantic branch of the medical profession.

**THE INSANE IN FOREIGN COUNTRIES.** By WILLIAM P. LETCHWORTH, President of the New York State Board of Charities. 8vo., pp. xii, 374. New York and London: G. P. Putnam's Sons. 1889.

It is a positive pleasure to notice this work. It is the outcome of an investigation of foreign charitable institutions, pursued without interruption for seven months, in which time special attention was given to the various kinds of provision made for the insane poor. Stenographic notes of visitations and interviews were made, and thus valuable opinions, expressed by distinguished specialists, with whom the treatment of the mentally diseased has been a life-long study, have been carefully noted. Mr. Letchworth has avoided medical theories and technicalities, and has presented the subject in plain language. Of the publishers' part, it is sufficient to say that the book comes from the Knickerbocker press, and is in that tasteful style for which the publishers are noted. It is well illustrated.

**CLINICAL LECTURES ON DISEASES OF THE URINARY ORGANS,** delivered at University College Hospital. By SIR HENRY THOMPSON. Eighth Edition. 8vo., pp. xiv., 470. Philadelphia: P. Blakiston, Son & Co. 1888. Chicago: W. T. Keener.

The first edition of this book, published twenty years ago, contained twelve lectures, the seventh edition twenty-six, and the present thirty-two. In the present edition the chief additions relate

to the supra-pubic operation for stone and for tumor, to the results of digital exploration of the bladder, to the recent modes of affording relief by operation in cases of advanced prostatic disease, to the latest operative treatment for tumors of the bladder, and embraces a *résumé* of the author's entire experience of operations for calculus, made up to the year 1886, numbering about 900 cases. All the material that was given in former editions has been thoroughly rewritten. The work has been translated into French, German, Italian, Spanish and Russian.

**HAND-BOOK OF PHYSIOLOGY.** By W. MORANT BAKER, F.R.C.S., late Lecturer on Physiology at St. Bartholomew's Hospital, etc., and VINCENT DORMER HARRIS, M.D., Demonstrator of Physiology at St. Bartholomew's Hospital, etc. Twelfth Edition, rearranged, revised and rewritten, with 500 illustrations. 8vo., pp. xi, 784. New York: William Wood & Company. 1889. Chicago: W. T. Keener.

This is the twelfth edition of the well-known Kirkes' Physiology, and contains a large amount of new matter, especially in the sections on the blood, the heart, and the muscular system, while the chapters on the nervous system, the reproductive organs, and on development have been rearranged, and to a great extent rewritten. Thus this popular work has been brought fully up to the present status of physiology. A work so well-known as this needs no further comment at our hands, especially when edited by such men as Mr. Baker and Dr. Harris.

**THE OPERATIONS OF SURGERY.** A Systematic Handbook for Practitioners, Students and Hospital Surgeons. By W. H. A. JACOBSON, F.R.C.S., Assistant Surgeon to Guy's Hospital, etc. With 199 illustrations. 8vo., pp. 1006. Philadelphia: P. Blakiston, Son & Co. 1889. Chicago: W. T. Keener.

This work is very comprehensive in scope and full in detail. The operations are well described and discussed as a rule, and the book may be commended as a safe guide to operative surgery.

**A HANDBOOK OF THERAPEUTICS.** By SIDNEY RINGER, M.D. Twelfth Edition. Pp. xi and 524. New York: William Wood & Co. 1889. Chicago: W. T. Keener.

A treatise which is so well and so favorably known as the subject of this notice needs no praise. The author states that in the preparation of this edition he has carefully revised every portion of it, and added much information both on new drugs and old. The plan is unchanged and it remains a work on clinical therapeutics of high value.

## PAMPHLETS RECEIVED.

Diseases of the Nose and Pharynx and Their Treatment. By W. Cheatham, M.D.

Malaria and the Causation of Periodic Fever. By Henry B. Baker, M.D.

The Philosophy of Memory. By D. T. Smith, M.D.

The President's Annual Address. By Robert Battey, M.D.

On the Circular Polarizations of Certain Tartrate Solutions. I. By J. H. Long.

New Form of Posterior Colporrhaphy. By J. H. Kellogg, M.D.

Experimental Researches Respecting the Relation of Dress to Pelvic Disorders of Women. By J. H. Kellogg, M.D.

Report of Forty-eight Cases of Alexander's Operation. By J. H. Kellogg, M.D.

The Etiology of Dipsomania. By Lewis D. Mason, M.D.

The Radical Cure of Varicocele. By Morris H. Henry, M.A., M.D.

Extremes in Altitude in Southern California. By Walter Lindley, M.D.

Transactions of the American Otological Society. Vol. 4, Part 2. 1888.

Annual Report of the Supervising Surgeon-General of the Marine Hospital Service of the United States for the Fiscal Year 1888.

Pulmonary Consumption Considered as a Neurosis. By Thomas J. Mays, M.D.

Two Cases of Gunshot Wound of the Abdomen. By N. Senn, M.D.

Inflation of the Stomach with Hydrogen Gas in the Diagnosis of Wounds and Perforations of this Organ. By N. Senn, M.D.

The Failure of Dr. J. B. Thomas' Treatment of Urethral Stricture by Electrolysis. By Robert Newman, M.D.

The Treatment of Peritonitis by Abdominal Section. By L. S. McMurtry, M.D.

Case of Typhlitis with Double Perforation of the Cæcum, and Peritonitis. By L. S. McMurtry, M.D.

Electricity vs. Tait, or The Use of Electricity in Inflammations as Found in Gynecology. By George F. Hurlburt, M.D.

Preliminary Report of an Operation for the Formation of an Artificial Pupil through the Sclerotic Coat of the Eyeball. By George Strawbridge, M.D.

The Influence of Cocaine upon Ophthalmic Surgery. By Samuel Theobald, M.D.

On Some Mild Measures in the Treatment of Intra-Nasal Hypertrophies and Inflammations. By W. H. Daly, M.D.

Is Astigmatism a Factor in the Causation of Glaucoma? By Samuel Theobald, M.D.

The Histology and Surgical Treatment of Uterine Myoma. By Henry O. Marey, M.D.

The Climate of the Southern Appalachians. By Henry O. Marey, M.D.

Placental Development. By Henry O. Marey, M.D.

The Case of the Emperor Frederick. Official Reports. By Henry Schweig, M.D.

The Anatomy and Pathology of the Thymus Gland. By A. Jacobi, M.D.

How Microorganisms Enter the Body. By George N. Kreider, M.D.

Femoral Osteotomy for the Correction of Deformity Resulting from Hip-Joint Disease. By Ap. Morgan Vance, M.D.

Cases in Orthopædic Surgery. By Ap. Morgan Vance, M.D.

Pregnancy and Operative Surgery. By Louis McLain Tiffany, M.D.

Osteotomy for Anterior Curves of the Leg. By DeForrest Willard, M.D.

The Electrolytic Decomposition of Organic Tissues. By George H. Rohe, M.D.

Food vs. Bacilli in Consumption. By Ephraim Cutler, M. D., LL.D.

Pressure Forceps, vs. the Ligature and the Suture in Vaginal Hysterectomy. By E. C. Dudley, M.D.

Laparotomy for Ascites. By Thomas A. Ashby, M.D.

Pathology and Treatment of Alopecia Areata. By A. R. Robinson, M.B.

The Question of Relationship between Lichen Planus (Wilson) and Lichen Ruber (Hebra). By A. R. Robinson, M.B.

Biniodide of Mercury. Its Antiseptic Use. By Eugene P. Bernardy, M.D.

Intubation in Chronic Stenosis of the Larynx. By Joseph O. Dwyer, M.D.

Intubation of the Larynx in Diphtheritic Croup. By Dillon Brown, M.D.

The Science of Successful Surgery. By John B. Roberts, M.D.

Emergency Hospitals. By Hal C. Wyman, M. S., M.D.

Twenty-Eighth Annual Report of the Cincinnati Hospital. 1888.

## MISCELLANY.

*Seventh Decennial Convention for Revising the Pharmacopœia of the United States.*

—Notice is hereby given that, in accordance with and by virtue of the authority vested

in me by the Convention of 1880, I hereby call upon the several incorporated Medical Societies, incorporated Medical Colleges, incorporated Colleges of Pharmacy, and incorporated Pharmaceutical Societies throughout the United States of America, The American Medical Association, and The American Pharmaceutical Association, to elect a number of delegates, not exceeding *three*, and upon the Surgeon-General of the Army, Surgeon-General of the Navy, and the Surgeon-General of the Marine Hospital Service to appoint, each, not exceeding *three* medical officers to attend a General Convention for the Revision and Publication of the Pharmacopœia of the United States of America, to assemble in the city of Washington, D. C., on the first Wednesday of May, 1890 (May 7th), at twelve o'clock noon.

The several bodies, as well as the Medical Departments of the Army, Navy and Marine Hospital Service, are hereby requested to submit the Pharmacopœia to a careful revision, and to transmit the result of their labors to the Committee of Revision at least three months before the meeting of the General Convention.

The several Medical and Pharmaceutical bodies are hereby requested to transmit to me, as the President of the Convention of 1880, the names and residences of their respective delegates, as soon as they shall have been appointed; a list of these delegates shall thereupon be published under my authority, for the information of the medical public, in the newspapers and medical journals in the month of March, 1890.

In the event of the death, resignation or inability of the President of the Convention of 1880 to act, these duties (in accordance with the Resolution of that Convention) shall devolve, successively, in the following order of precedence: upon the Vice-Presidents, the Secretary, the Asst. Secretary, and the Chairman of the Committee of

Revision and Publication of the Pharmacopœia.

These officers are as follows: *First Vice-President*, Samuel C. Busey, M. D., of Washington, D. C.; *Second Vice-President*, P. W. Bedford, Ph. G., of New York; *Secretary*, Frederick A. Castle, M. D., of New York; *Assistant Secretary*, C. H. A. Kleinschmidt, M. D., of Washington, D. C.; *Chairman of the Committee of Revision*, Charles Rice, Ph. D., of New York; *First Vice-Chairman of the Committee of Revision*, Joseph P. Remington, Ph. M., of Philadelphia, Pa.; *Second Vice-Chairman of the Committee of Revision*, C. Lewis Diehl, Ph. G., of Louisville, Ky.

At the General Convention held in Washington, D. C., on the fifth day of May, 1880, the organizations and bodies enumerated in the Abstract of the Proceedings of the National Convention of 1880, on pp. xv. to xviii. of the U. S. Pharmacopœia of 1882, were recognized as being entitled to representation.

If any body other than those admitted in 1880 shall desire a representation in the Convention of 1890, it is suggested that the proof of incorporation, signed by the Secretary of State, of the State which shall have issued the charter, or by properly qualified public officials of the United States, be presented with the credentials of the delegation.

A blank form of certificate of appointment of delegates will be sent upon application by letter to my address, care of Dr. Edwin H. Brigham, Assistant Librarian of the Boston Medical Library, 19 Boylston Place, Boston, Mass.

(Signed) ROBERT AMORY,

*President of the Convention of 1880.*  
Boston, March 9th, 1889.

*The Death of Professor Donders*, the celebrated Professor of Physiology in the University of Utrecht, the latter part of March, removes a man whose name and labors were known throughout the civilized

world. He was born at Tilburg in 1818. In 1848 he took up the special study of the then new science of ophthalmology, and in 1851 founded the first hospital for the treatment of diseases of the eye in Holland. Since that time he has published a great deal on the diseases of the eye. His resignation from his chair last year was made the occasion of a ceremonial, when \$15,000 was presented to him by his pupils and admirers. This sum he generously devoted to the establishment of scholarships in physiological and ophthalmological science.

*The Illinois State Medical Society* will hold its next annual meeting in Jacksonville on the third Tuesday in May. It will be an important meeting in many respects, and there should be a full attendance of the members.

Dr. T. M. Cullimore, Assistant Secretary, furnishes the following list of railroads which have agreed to sell tickets for one-third fare in returning, to those who paid full fare in going to the meeting:

Chicago and Alton Railway.

Chicago and Northwestern Railway.

Chicago, Burlington and Northern Railway.

Chicago, Burlington and Quincy Railway.

Chicago, Milwaukee and St. Paul Railway.

Chicago, Rock Island and Pacific Railway.

Chicago, St. Paul and Kansas Railway.

Chicago, Santa Fe and California Railway.

Illinois Central Railway.

Rock Island and Peoria Railway.

Wisconsin Central Lines Railway.

Wabash Railway.

Jacksonville Southeastern Railway.

**Bacteria and Books.**—A good deal of discussion has been going on as to whether books may convey pathogenic bacteria. Recent researches at Dresden tend to show

that pathogenic bacilli are not capable of living in or on books for any length of time. The details of the experiments have not been published. Meanwhile, it is probably best to assume that books may be "inoculated" by persons suffering with infectious diseases.

*The Annual Meeting of the National Association of Railway Surgeons* will be held at St. Louis, Mo., on Thursday and Friday, May the 2d and 3d, 1889. The prospects are that this will be one among the largest gatherings of medical men ever assembled in this country. Dr. W. B. Outten, of St. Louis, is the Chairman of the Committee of Arrangements, and everything will be complete for the accommodation of the surgeons. Any information desired can be had by addressing the Secretary, C. B. Stemen, M.D., Fort Wayne, Ind.

*The American Medical Association* will hold its fortieth annual meeting at Newport, R. I., on June 25, 26, 27, and 28, 1889. From reports already published by the Secretaries of the Sections, the meeting promises to be one of unusual interest. The general addresses will be delivered by Professors William Pepper of Philadelphia, Wm. H. Welch of Baltimore, and P. S. Conner of Cincinnati.

*The Death of Dr. C. J. B. Williams*, at the age of 84, is announced. He retired from practice in 1875, but previous to that time was one of the best known and most eminent of British physicians. He may be regarded as the one that really introduced cod-liver oil as a means of treating consumption.

*An International Congress of Otology and Laryngology* is to be held in Paris, France, during the International Exposition of this year. The date of the proposed Congress is from the 16th to 21st of September. The Trocadéro palace is to be the place of meeting.